

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 09:30:54 ON 22 SEP 2003

=> fil .bec

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS,  
ESBIOBASE, BIOTECHNO, WPIDS' ENTERED AT 09:31:02 ON 22 SEP 2003  
ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

11 FILES IN THE FILE LIST

=> s alpha glucosidase#

FILE 'MEDLINE'

454313 ALPHA

10022 GLUCOSIDASE#

L1 4246 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'SCISEARCH'

643876 ALPHA

7752 GLUCOSIDASE#

L2 2544 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'LIFESCI'

147374 "ALPHA"

3858 GLUCOSIDASE#

L3 1407 ALPHA GLUCOSIDASE#  
("ALPHA" (W) GLUCOSIDASE#)

FILE 'BIOTECHDS'

23979 ALPHA

3042 GLUCOSIDASE#

L4 631 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'BIOSIS'

596697 ALPHA

10653 GLUCOSIDASE#

L5 3602 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'EMBASE'

508813 "ALPHA"

8954 GLUCOSIDASE#

L6 4846 ALPHA GLUCOSIDASE#  
("ALPHA" (W) GLUCOSIDASE#)

FILE 'HCAPLUS'

1434625 ALPHA

15609 GLUCOSIDASE#

L7 5050 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'NTIS'

28426 ALPHA

91 GLUCOSIDASE#

L8 5 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'ESBIOBASE'  
176805 ALPHA  
5065 GLUCOSIDASE#  
L9 710 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'BIOTECHNO'  
183303 ALPHA  
4163 GLUCOSIDASE#  
L10 1741 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

FILE 'WPIDS'  
165002 ALPHA  
1371 GLUCOSIDASE#  
L11 591 ALPHA GLUCOSIDASE#  
(ALPHA (W) GLUCOSIDASE#)

TOTAL FOR ALL FILES  
L12 25373 ALPHA GLUCOSIDASE#

=> s l12 and (high mannose)

FILE 'MEDLINE'  
1147840 HIGH  
16633 MANNOSE  
1894 HIGH MANNOSE  
(HIGH (W) MANNOSE)  
L13 51 L1 AND (HIGH MANNOSE)

FILE 'SCISEARCH'  
1662292 HIGH  
12311 MANNOSE  
1232 HIGH MANNOSE  
(HIGH (W) MANNOSE)  
L14 9 L2 AND (HIGH MANNOSE)

FILE 'LIFESCI'  
319327 "HIGH"  
5538 "MANNOSE"  
619 HIGH MANNOSE  
("HIGH" (W) "MANNOSE")  
L15 9 L3 AND (HIGH MANNOSE)

FILE 'BIOTECHDS'  
59408 HIGH  
1594 MANNOSE  
124 HIGH MANNOSE  
(HIGH (W) MANNOSE)  
L16 2 L4 AND (HIGH MANNOSE)

FILE 'BIOSIS'  
1288397 HIGH  
19310 MANNOSE  
2009 HIGH MANNOSE  
(HIGH (W) MANNOSE)  
L17 17 L5 AND (HIGH MANNOSE)

FILE 'EMBASE'  
1110952 "HIGH"  
12998 "MANNOSE"  
1552 HIGH MANNOSE  
("HIGH" (W) "MANNOSE")  
L18 26 L6 AND (HIGH MANNOSE)

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FILE 'HCAPLUS'
    3235469 HIGH
    34625 MANNOSE
    2232 HIGH MANNOSE
        (HIGH(W) MANNOSE)
L19      27 L7 AND (HIGH MANNOSE)

FILE 'NTIS'
    316508 HIGH
    112 MANNOSE
    6 HIGH MANNOSE
        (HIGH(W) MANNOSE)
L20      0 L8 AND (HIGH MANNOSE)

FILE 'ESBIOBASE'
    376465 HIGH
    4745 MANNOSE
    569 HIGH MANNOSE
        (HIGH(W) MANNOSE)
L21      3 L9 AND (HIGH MANNOSE)

FILE 'BIOTECHNO'
    290618 HIGH
    7018 MANNOSE
    1167 HIGH MANNOSE
        (HIGH(W) MANNOSE)
L22     19 L10 AND (HIGH MANNOSE)

FILE 'WPIDS'
    1732738 HIGH
    2350 MANNOSE
    42 HIGH MANNOSE
        (HIGH(W) MANNOSE)
L23      2 L11 AND (HIGH MANNOSE)

TOTAL FOR ALL FILES
L24     165 L12 AND (HIGH MANNOSE)

=> s l24 not 2002-2003/py
FILE 'MEDLINE'
    898624 2002-2003/PY
L25     49 L13 NOT 2002-2003/PY

FILE 'SCISEARCH'
    1628347 2002-2003/PY
L26      8 L14 NOT 2002-2003/PY

FILE 'LIFESCI'
    137782 2002-2003/PY
L27      9 L15 NOT 2002-2003/PY

FILE 'BIOTECHDS'
    36013 2002-2003/PY
L28      1 L16 NOT 2002-2003/PY

FILE 'BIOSIS'
    812724 2002-2003/PY
L29     16 L17 NOT 2002-2003/PY

FILE 'EMBASE'
    739028 2002-2003/PY
L30     25 L18 NOT 2002-2003/PY

FILE 'HCAPLUS'

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1765463 2002-2003/PY  
L31 23 L19 NOT 2002-2003/PY

FILE 'NTIS'  
17588 2002-2003/PY  
L32 0 L20 NOT 2002-2003/PY

FILE 'ESBIOBASE'  
467486 2002-2003/PY  
L33 2 L21 NOT 2002-2003/PY

FILE 'BIOTECHNO'  
203275 2002-2003/PY  
L34 18 L22 NOT 2002-2003/PY

FILE 'WPIDS'  
1736742 2002-2003/PY  
L35 0 L23 NOT 2002-2003/PY

TOTAL FOR ALL FILES  
L36 151 L24 NOT 2002-2003/PY

=> dup rem l36  
PROCESSING COMPLETED FOR L36  
L37 73 DUP REM L36 (78 DUPLICATES REMOVED)

=> d tot

L37 ANSWER 1 OF 73 MEDLINE on STN  
TI Retention of glucose on oligosaccharide chains linked to the LH/hCG  
receptor prevents cell surface expression.  
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2001 Mar 30) 282 (2)  
454-62.  
Journal code: 0372516. ISSN: 0006-291X.  
AU Bradbury F A; Menon K M  
AN 2001332512 MEDLINE

L37 ANSWER 2 OF 73 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
TI Lysosomal cysteine protease, cathepsin H, is targeted to lysosomes by the  
mannose 6-phosphate-independent system in rat hepatocytes  
SO BIOLOGICAL & PHARMACEUTICAL BULLETIN, (JUL 2000) Vol. 23, No. 7, pp.  
805-809.  
Publisher: PHARMACEUTICAL SOC JAPAN, 2-12-15-201 SHIBUYA, SHIBUYA-KU,  
TOKYO 150, JAPAN.  
ISSN: 0918-6158.  
AU Tanaka Y; Tanaka R; Himeno M (Reprint)  
AN 2000:528021 SCISEARCH

L37 ANSWER 3 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN  
TI Expression and Characterization of Glycosylated and Catalytically Active  
Recombinant Human .alpha.-Galactosidase A Produced in Pichia pastoris  
SO Protein Expression and Purification (2000), 20, 472-484  
CODEN: PEXPEJ; ISSN: 1046-5928  
AU Chen, Yingsi; Jin, Ming; Egborge, Tobore; Coppola, George; Andre, Jamie;  
Calhoun, David H.  
AN 2000:818937 HCAPLUS  
DN 134:146439

L37 ANSWER 4 OF 73 MEDLINE on STN  
TI Role of N-linked carbohydrate processing and calnexin in human hepatic  
lipase secretion.  
SO JOURNAL OF LIPID RESEARCH, (1999 Sep) 40 (9) 1627-35.  
Journal code: 0376606. ISSN: 0022-2275.  
AU Boedeker J C; Doolittle M; Santamarina-Fojo S; White A L

AN 1999414452 MEDLINE

L37 ANSWER 5 OF 73 MEDLINE on STN  
 TI Trypanosoma cruzi calreticulin is a lectin that binds monoglucosylated oligosaccharides but not protein moieties of glycoproteins.  
 SO MOLECULAR BIOLOGY OF THE CELL, (1999 May) 10 (5) 1381-94.  
 Journal code: 9201390. ISSN: 1059-1524.  
 AU Labriola C; Cazzulo J J; Parodi A J  
 AN 1999250150 MEDLINE

L37 ANSWER 6 OF 73 MEDLINE on STN DUPLICATE 1  
 TI Protein specific N-glycosylation of tyrosinase and tyrosinase-related protein-1 in B16 mouse melanoma cells.  
 SO BIOCHEMICAL JOURNAL, (1999 Dec 15) 344 Pt 3 659-65.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Negroiu G; Branza-Nichita N; Petrescu A J; Dwek R A; Petrescu S M.  
 AN 2000053879 MEDLINE

L37 ANSWER 7 OF 73 MEDLINE on STN DUPLICATE 2  
 TI Importance of glycosidases in mammalian glycoprotein biosynthesis.  
 SO BIOCHIMICA ET BIOPHYSICA ACTA, (1999 Dec 6) 1473 (1) 96-107. Ref: 107  
 Journal code: 0217513. ISSN: 0006-3002.  
 AU Herscovics A  
 AN 2000047733 MEDLINE

L37 ANSWER 8 OF 73 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Importance of glycosidases in mammalian glycoprotein biosynthesis  
 SO BIOCHIMICA ET BIOPHYSICA ACTA-GENERAL SUBJECTS, (6 DEC 1999) Vol. 1473, No. 1, pp. 96-107.  
 Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.  
 ISSN: 0304-4165.  
 AU Herscovics A (Reprint)  
 AN 1999:963112 SCISEARCH

L37 ANSWER 9 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Structure and catalytic mechanism of crystalline **.alpha.-glucosidase** from Aspergillus niger  
 SO Oyo Toshitsu Kagaku (1998), 45(1), 71-79  
 CODEN: OTKAE3; ISSN: 1340-3494  
 AU Kimura, Atsuo  
 AN 1998:229337 HCAPLUS  
 DN 128:291830

L37 ANSWER 10 OF 73 MEDLINE on STN DUPLICATE 3  
 TI Homonojirimycin and N-methyl-homonojirimycin inhibit N-linked oligosaccharide processing.  
 SO GLYCOBIOLOGY, (1997 Mar) 7 (2) 297-304.  
 Journal code: 9104124. ISSN: 0959-6658.  
 AU Zeng Y; Pan Y T; Asano N; Nash R J; Elbein A D  
 AN 97280062 MEDLINE

L37 ANSWER 11 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Primary structure and sugar chains of crystalline **.alpha.-glucosidase** from Aspergillus niger  
 SO Oyo Toshitsu Kagaku (1997), 44(2), 233-243  
 CODEN: OTKAE3; ISSN: 1340-3494  
 AU Kimura, Atsuo; Takayanagi, Tsutomu; Mori, Haruhide; Matsui, Hirokazu; Uozumi, Takeshi; Chiba, Seiya  
 AN 1997:499661 HCAPLUS  
 DN 127:146320

L37 ANSWER 12 OF 73 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Consequences of disrupting the gene that encodes **alpha-**

**glucosidase** II in the N-linked oligosaccharide biosynthesis pathway of Dictyostelium discoideum

SO DEVELOPMENTAL GENETICS, (20 NOV 1997) Vol. 21, No. 3, pp. 177-186.  
 Publisher: WILEY-LISS, DIV JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012.  
 ISSN: 0192-253X.

AU Freeze H H (Reprint); Lammertz M; Iranfar N; Fuller D; Panneerselvam K; Loomis W F

AN 97:902261 SCISEARCH

  

L37 ANSWER 13 OF 73 MEDLINE on STN DUPLICATE 4

TI Glucoamylase mutants in the conserved active-site segment Trp170-Tyr175 located at a distance from the site of catalysis.

SO PROTEIN ENGINEERING, (1997 Jan) 10 (1) 81-7.  
 Journal code: 8801484. ISSN: 0269-2139.

AU Stoffer B B; Dupont C; Frandsen T P; Lehmbeck J; Svensson B

AN 97204166 MEDLINE

  

L37 ANSWER 14 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN

TI Molecular structure of **.alpha.-glucosidase** from Aspergillus niger

SO Kagaku to Seibutsu (1996), 34(8), 497-499  
 CODEN: KASEAA; ISSN: 0453-073X

AU Kimura, Atsuo

AN 1996:503882 HCAPLUS

DN 125:135984

  

L37 ANSWER 15 OF 73 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI GLYCOSYLATION AND PHOSPHORYLATION OF LYSOSOMAL GLYCOSYLSPARAGINASE

SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (01 APR 1996) Vol. 328, No. 1, pp. 73-77.  
 ISSN: 0003-9861.

AU PARK H; VETTESEDADEY M; ARONSON N N (Reprint)

AN 96:279648 SCISEARCH

  

L37 ANSWER 16 OF 73 MEDLINE on STN DUPLICATE 5

TI The **alpha-glucosidase** I inhibitor castanospermine alters endothelial cell glycosylation, prevents angiogenesis, and inhibits tumor growth.

SO CANCER RESEARCH, (1995 Jul 1) 55 (13) 2920-6.  
 Journal code: 2984705R. ISSN: 0008-5472.

AU Pili R; Chang J; Partis R A; Mueller R A; Chrest F J; Passaniti A

AN 95316869 MEDLINE

  

L37 ANSWER 17 OF 73 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

TI Involvement of detergent-insoluble complexes in the intracellular transport of intestinal brush border enzymes.

SO Biochemistry, (1995) 34/5 (1596-1605).  
 ISSN: 0006-2960 CODEN: BICHAW

AU Danielsen E.M.

AN 95133128 EMBASE

  

L37 ANSWER 18 OF 73 MEDLINE on STN DUPLICATE 6

TI Glucose trimming and reglucosylation determine glycoprotein association with calnexin in the endoplasmic reticulum.

SO CELL, (1995 May 5) 81 (3) 425-33.  
 Journal code: 0413066. ISSN: 0092-8674.

AU Hebert D N; Foellmer B; Helenius A

AN 95254652 MEDLINE

  

L37 ANSWER 19 OF 73 MEDLINE on STN

TI Cloning and expression of glucosidase I from human hippocampus.

SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (1995 Jul 15) 231 (2) 344-51.

Journal code: 0107600. ISSN: 0014-2956.

AU Kalz-Fuller B; Bieberich E; Bause E  
AN 95361857 MEDLINE

L37 ANSWER 20 OF 73 MEDLINE on STN DUPLICATE 7

TI Dimeric assembly of enterocyte brush border enzymes.

SO BIOCHEMISTRY, (1994 Feb 15) 33 (6) 1599-605.

Journal code: 0370623. ISSN: 0006-2960.

AU Danielsen E M

AN 94146015 MEDLINE

L37 ANSWER 21 OF 73 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.  
on STN DUPLICATE 8

TI Microbial endoglycosidases for analyses of oligosaccharide chains in glycoproteins.

SO Journal of Biochemistry, (1994) 116/2 (229-235).

ISSN: 0021-924X CODEN: JOBIAO

AU Yamamoto K.

AN 94273039 EMBASE

L37 ANSWER 22 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN

TI Mannosidases of the Golgi complex

SO Guidebook to the Secretory Pathway (1994), 185. Editor(s): Rothblatt, Jonathan; Novick, Peter; Stevens, Tom H. Publisher: Oxford University Press, Oxford, UK.

CODEN: 64AJAT

AU Trimble, Robert B.; Moremen, Kelley W.; Herscovics, Annette

AN 1997:149943 HCAPLUS

DN 126:184124

L37 ANSWER 23 OF 73 MEDLINE on STN DUPLICATE 9

TI Novel structures of N-linked **high-mannose** type oligosaccharides containing alpha-D-galactofuranosyl linkages in *Aspergillus niger* alpha-D-glucosidase.

SO CARBOHYDRATE RESEARCH, (1994 Mar 18) 256 (1) 149-58.

Journal code: 0043535. ISSN: 0008-6215.

AU Takayanagi T; Kimura A; Chiba S; Ajisaka K

AN 94251775 MEDLINE

L37 ANSWER 24 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN

TI N-Glycan processing in the endoplasmic reticulum

SO Guidebook to the Secretory Pathway (1994), 100-101. Editor(s): Rothblatt, Jonathan; Novick, Peter; Stevens, Tom H. Publisher: Oxford University Press, Oxford, UK.

CODEN: 64AJAT

AU Trimble, Robert B.; Moremen, Kelly W.; Herscovics, Annette

AN 1997:146881 HCAPLUS

DN 126:182729

L37 ANSWER 25 OF 73 MEDLINE on STN

TI Inhibitors of N-linked oligosaccharide processing glucosidases interfere with oligodendrocyte differentiation in culture.

SO JOURNAL OF NEUROSCIENCE RESEARCH, (1994 Sep 1) 39 (1) 1-10.

Journal code: 7600111. ISSN: 0360-4012.

AU Bhat N R; Zhang P

AN 95106342 MEDLINE

L37 ANSWER 26 OF 73 MEDLINE on STN DUPLICATE 10

TI Role of endoplasmic reticular calcium in oligosaccharide processing of alpha 1-antitrypsin.

SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 Jan 25) 268 (3) 2001-8.

Journal code: 2985121R. ISSN: 0021-9258.

AU Kuznetsov G; Brostrom M A; Brostrom C O

AN 93131955 MEDLINE

L37 ANSWER 27 OF 73 MEDLINE on STN  
 TI Conserved structural features in glycoprotein processing glucosidase I from several tissues and species.  
 SO INDIAN JOURNAL OF BIOCHEMISTRY AND BIOPHYSICS, (1993 Dec) 30 (6) 333-40.  
 Journal code: 0310774. ISSN: 0301-1208.  
 AU Pukazhenthil B S; Varma G M; Vijay I K  
 AN 94274231 MEDLINE

L37 ANSWER 28 OF 73 MEDLINE on STN  
 TI Identification of a novel mechanism for the removal of glucose residues from **high mannose**-type oligosaccharides.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1992 Oct 25) 267 (30) 21671-7.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Suh K; Gabel C A; Bergmann J E  
 AN 93016119 MEDLINE

L37 ANSWER 29 OF 73 MEDLINE on STN  
 TI Glycoprotein processing is required for completion but not initiation of oligodendroglial differentiation from its bipotential progenitor cell.  
 SO DEVELOPMENTAL NEUROSCIENCE, (1992) 14 (3) 221-9.  
 Journal code: 7809375. ISSN: 0378-5866.  
 AU Ishii S; Volpe J J  
 AN 93161961 MEDLINE

L37 ANSWER 30 OF 73 MEDLINE on STN  
 TI Glucosidase I, a transmembrane endoplasmic reticular glycoprotein with a luminal catalytic domain.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1991 Sep 5) 266 (25) 16587-93.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Shailubhai K; Pukazhenthil B S; Saxena E S; Varma G M; Vijay I K  
 AN 91358448 MEDLINE

L37 ANSWER 31 OF 73 MEDLINE on STN  
 TI A major proportion of N-glycoproteins are transiently glucosylated in the endoplasmic reticulum.  
 SO BIOCHEMISTRY, (1991 Mar 26) 30 (12) 3098-104.  
 Journal code: 0370623. ISSN: 0006-2960.  
 AU Ganai S; Cazzulo J J; Parodi A J  
 AN 91175763 MEDLINE

L37 ANSWER 32 OF 73 MEDLINE on STN  
 TI Glycosidase inhibitors as antiviral and/or antitumor agents.  
 SO SEMINARS IN CELL BIOLOGY, (1991 Oct) 2 (5) 309-17. Ref: 48  
 Journal code: 9007587. ISSN: 1043-4682.  
 AU Elbein A D  
 AN 92256828 MEDLINE

L37 ANSWER 33 OF 73 MEDLINE on STN  
 TI Purification to homogeneity and properties of glucosidase II from mung bean seedlings and suspension-cultured soybean cells.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1990 Sep 25) 265 (27) 16271-9.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Kaushal G P; Pastuszak I; Hatanaka K; Elbein A D  
 AN 90375488 MEDLINE

L37 ANSWER 34 OF 73 MEDLINE on STN  
 TI Secretion of rat hepatic lipase is blocked by inhibition of oligosaccharide processing at the stage of glucosidase I.  
 SO JOURNAL OF LIPID RESEARCH, (1990 Oct) 31 (10) 1883-93.  
 Journal code: 0376606. ISSN: 0022-2275.  
 AU Verhoeven A J; Jansen H  
 AN 91178395 MEDLINE



L37 ANSWER 35 OF 73 MEDLINE on STN  
 TI High molecular weight soluble neutral maltase-glucoamylases in the intestine of the suckling rat.  
 SO BIOCHEMISTRY AND CELL BIOLOGY, (1990 Sep) 68 (9) 1103-11.  
 Journal code: 8606068. ISSN: 0829-8211.  
 AU Lee L; Forstner G  
 AN 91077071 MEDLINE

L37 ANSWER 36 OF 73 MEDLINE on STN  
 TI Studies on hormonal modulation of asparagine-linked glycoprotein biosynthesis in explant cultures of rat mammary gland.  
 SO INDIAN JOURNAL OF BIOCHEMISTRY AND BIOPHYSICS, (1990 Dec) 27 (6) 425-9.  
 Journal code: 0310774. ISSN: 0301-1208.  
 AU Shailubhai K; Saxena E S; Balapure A K; Vijay I K  
 AN 91340384 MEDLINE

L37 ANSWER 37 OF 73 MEDLINE on STN DUPLICATE 11  
 TI Cell type-specific post-Golgi apparatus localization of a "resident" endoplasmic reticulum glycoprotein, glucosidase II.  
 SO JOURNAL OF CELL BIOLOGY, (1990 Feb) 110 (2) 309-18.  
 Journal code: 0375356. ISSN: 0021-9525.  
 AU Brada D; Kerjaschki D; Roth J  
 AN 90130621 MEDLINE

L37 ANSWER 38 OF 73 MEDLINE on STN  
 TI The effect of castanospermine on the synthesis of synaptic glycoproteins by rat brain slices.  
 SO NEUROCHEMICAL RESEARCH, (1990 Mar) 15 (3) 257-63.  
 Journal code: 7613461. ISSN: 0364-3190.  
 AU Howes S; Bissoon N; Ito M; Beesley P W; Gurd J W  
 AN 90310156 MEDLINE

L37 ANSWER 39 OF 73 LIFESCI COPYRIGHT 2003 CSA on STN  
 TI Posttranslational regulation of sucrase-isomaltase expression in intestinal crypt and villus cells.  
 SO J. BIOL. CHEM., (1989) vol. 264, no. 33, pp. 20000-11.  
 AU Beaulieu, J.-F.; Nichols, B.; Quaroni, A.  
 AN 89:89731 LIFESCI

L37 ANSWER 40 OF 73 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED. on STN  
 TI Glucosylation of glycoproteins by mammalian, plant, fungal, and trypanosomatid protozoa microsomal membranes.  
 SO Biochemistry, (1989) 28/20 (8108-8116).  
 ISSN: 0006-2960 CODEN: BICHAW  
 AU Trombetta S.E.; Bosch M.; Parodi A.J.  
 AN 89252936 EMBASE

L37 ANSWER 41 OF 73 MEDLINE on STN DUPLICATE 12  
 TI Effect of the **alpha-glucosidase** inhibitor N-hydroxyethyl-1-deoxynojirimycin (Bay m 1099) on the biosynthesis of liver secretory glycoproteins.  
 SO BIOCHEMICAL PHARMACOLOGY, (1989 Aug 1) 38 (15) 2479-86.  
 Journal code: 0101032. ISSN: 0006-2952.  
 AU Ludolph D; Gross V; Katz N R; Giffhorn-Katz S; Kreisel W; Heinrich P C; Gerok W  
 AN 89334916 MEDLINE

L37 ANSWER 42 OF 73 MEDLINE on STN  
 TI Purification and characterization of trimming glucosidase I from pig liver.  
 SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (1989 Aug 15) 183 (3) 661-9.  
 Journal code: 0107600. ISSN: 0014-2956.  
 AU Bause E; Schweden J; Gross A; Orthen B

AN 89377834 MEDLINE

L37 ANSWER 43 OF 73 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
TI Purification and characterization of beta-mannosidase from human  
placenta;  
by chromatography, enzyme characterization  
SO J.Biochem.; (1989) 106, 2, 331-35  
CODEN: JOBIAO  
AU Iwasaki Y; Tsuji A; Omura K; \*Suzuki Y  
AN 1989-12251 BIOTECHDS

L37 ANSWER 44 OF 73 MEDLINE on STN DUPLICATE 13  
TI Biosynthesis of high molecular weight polylactosamine-type glycopeptides  
in rat Zajdela hepatoma ascites cells.  
SO BIOCHIMICA ET BIOPHYSICA ACTA, (1989 May 10) 1011 (2-3) 110-6.  
Journal code: 0217513. ISSN: 0006-3002.  
AU Saunier B; Goulut C; Nato F; Bourrillon R  
AN 89229209 MEDLINE

L37 ANSWER 45 OF 73 MEDLINE on STN DUPLICATE 14  
TI A simple and rapid microplate assay for glycoprotein-processing  
glycosidases.  
SO ANALYTICAL BIOCHEMISTRY, (1989 Aug 15) 181 (1) 109-12.  
Journal code: 0370535. ISSN: 0003-2697.  
AU Kang M S; Zwolshen J H; Harry B S; Sunkara P S  
AN 90054296 MEDLINE

L37 ANSWER 46 OF 73 MEDLINE on STN DUPLICATE 15  
TI Structure, biosynthesis, and glycosylation of human small intestinal  
maltase-glucoamylase.  
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1988 Dec 25) 263 (36) 19709-17.  
Journal code: 2985121R. ISSN: 0021-9258.  
AU Naim H Y; Sterchi E E; Lentze M J  
AN 89066802 MEDLINE

L37 ANSWER 47 OF 73 LIFESCI COPYRIGHT 2003 CSA on STN  
TI Biosynthesis of the human sucrase-isomaltase complex. Differential  
O-glycosylation of the sucrase subunit correlates with its position within  
the enzyme complex.  
SO J. BIOL. CHEM., (1988) vol. 263, no. 15, pp. 7242-7253.  
AU Naim, H.Y.; Sterchi, E.E.; Lentze, M.J.  
AN 88:56766 LIFESCI

L37 ANSWER 48 OF 73 LIFESCI COPYRIGHT 2003 CSA on STN  
TI Sucrase-isomaltase deficiency in humans. Different mutations disrupt  
intracellular transport, processing, and function of an intestinal brush  
border enzyme.  
SO J. CLIN. INVEST., (1988) vol. 82, no. 2, pp. 667-679.  
AU Naim, H.Y.; Roth, J.; Sterchi, E.E.; Lentze, M.; Milla, P.; Schmitz, J.;  
Hauri, H.-P.  
AN 88:67922 LIFESCI

L37 ANSWER 49 OF 73 LIFESCI COPYRIGHT 2003 CSA on STN  
TI Monensin inhibits the expression of sucrase-isomaltase in Caco-2 cells at  
the mRNA level.  
SO FEBS LETT., (1988) vol. 235, no. 1-2, pp. 125-128.  
AU Chantret, I.; Trugnan, G.; Dussaulx, E.; Zweibaum, A.; Rousset, M.  
AN 88:64575 LIFESCI

L37 ANSWER 50 OF 73 MEDLINE on STN DUPLICATE 16  
TI Receptor-mediated uptake of acid **alpha-glucosidase**  
corrects lysosomal glycogen storage in cultured skeletal muscle.  
SO PEDIATRIC RESEARCH, (1988 Jul) 24 (1) 90-4.  
Journal code: 0100714. ISSN: 0031-3998.

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Galjaard H  
AN 88319846 MEDLINE

L37 ANSWER 51 OF 73 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 17  
TI YOLK HYDROLASE ACTIVITIES ASSOCIATED WITH POLYPEPTIDE AND OLIGOSACCHARIDE  
PROCESSING OF BLATTELLA-GERMANICA VITELLIN.  
SO ARCH INSECT BIOCHEM PHYSIOL, (1988) 8 (1), 39-58.  
CODEN: AIBPEA. ISSN: 0739-4462.  
AU PURCELL J P; KUNKEL J G; NORDIN J H  
AN 1988:483081 BIOSIS

L37 ANSWER 52 OF 73 MEDLINE on STN  
TI Glucosidase II, a protein of the endoplasmic reticulum with **high**  
**mannose** oligosaccharide chains and a rapid turnover.  
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1987 Mar 15) 262 (8) 3620-5.  
Journal code: 2985121R. ISSN: 0021-9258.  
AU Strous G J; Van Kerkhof P; Brok R; Roth J; Brada D  
AN 87137658 MEDLINE

L37 ANSWER 53 OF 73 MEDLINE on STN  
TI Purification and characterization of glucosidase II involved in N-linked  
glycoprotein processing in bovine mammary gland.  
SO BIOCHEMICAL JOURNAL, (1987 Nov 1) 247 (3) 563-70.  
Journal code: 2984726R. ISSN: 0264-6021.  
AU Saxena S; Shailubhai K; Dong-Yu B; Vijay I K  
AN 88106388 MEDLINE

L37 ANSWER 54 OF 73 MEDLINE on STN  
TI Characterization of calf liver glucosidase I and its inhibition by basic  
sugar analogs.  
SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (1986 Jul) 248 (1) 335-40.  
Journal code: 0372430. ISSN: 0003-9861.  
AU Schweden J; Borgmann C; Legler G; Bause E  
AN 86267773 MEDLINE

L37 ANSWER 55 OF 73 MEDLINE on STN DUPLICATE 18  
TI Carbohydrates of lysosomal enzymes secreted by Tetrahymena pyriformis.  
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1985 Nov 15) 260 (26) 13941-6.  
Journal code: 2985121R. ISSN: 0021-9258.  
AU Taniguchi T; Mizuochi T; Banno Y; Nozawa Y; Kobata A  
AN 86033869 MEDLINE

L37 ANSWER 56 OF 73 MEDLINE on STN  
TI Transport to cell surface of intestinal sucrase-isomaltase is blocked in  
the Golgi apparatus in a patient with congenital sucrase-isomaltase  
deficiency.  
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Journal code: 7505876. ISSN: 0027-8424.  
AU Hauri H P; Roth J; Sterchi E E; Lentze M J  
AN 85242696 MEDLINE

L37 ANSWER 57 OF 73 MEDLINE on STN DUPLICATE 19  
TI Enzymatic activity of "**high-mannose**" glycosylated  
forms of intestinal microvillar hydrolases.  
SO JOURNAL OF PEDIATRIC GASTROENTEROLOGY AND NUTRITION, (1985 Dec) 4 (6)  
980-3.  
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AN 86062147 MEDLINE

L37 ANSWER 58 OF 73 MEDLINE on STN DUPLICATE 20

TI Glucosidase II, a glycoprotein of the endoplasmic reticulum membrane.  
 Proteolytic cleavage into enzymatically active fragments.  
 SO BIOCHEMISTRY, (1985 Jan 29) 24 (3) 800-5.  
 Journal code: 0370623. ISSN: 0006-2960.  
 AU Hino Y; Rothman J E  
 AN 85199816 MEDLINE

L37 ANSWER 59 OF 73 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.  
 on STN DUPLICATE 21  
 TI The effect of castanospermine on the oligosaccharide structures of  
 glycoproteins from lymphoma cell lines.  
 SO Biochemical Journal, (1985) 227/3 (795-804).  
 CODEN: BIJOAK  
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 AN 85194656 EMBASE

L37 ANSWER 60 OF 73 MEDLINE on STN  
 TI Castanospermine inhibits glucosidase I and glycoprotein secretion in human  
 hepatoma cells.  
 SO BIOCHEMICAL JOURNAL, (1985 Dec 15) 232 (3) 759-66.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Sasak V W; Ordovas J M; Elbein A D; Berninger R W  
 AN 86130399 MEDLINE

L37 ANSWER 61 OF 73 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 DUPLICATE 22  
 TI ABNORMAL PROCESSING OF THE MODIFIED OLIGOSACCHARIDE SIDE CHAINS OF  
 PHYTOHEMAGGLUTININ IN THE PRESENCE OF SWAINSONINE AND DEOXYNOJIRIMYCIN.  
 SO PLANT PHYSIOL (BETHESDA), (1985) 78 (4), 704-709.  
 CODEN: PLPHAY. ISSN: 0032-0889.  
 AU CHRISPEELS M J; VITALE A  
 AN 1986:117044 BIOSIS

L37 ANSWER 62 OF 73 MEDLINE on STN  
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 virus.  
 SO VIRUS RESEARCH, (1985 Mar) 2 (2) 139-49.  
 Journal code: 8410979. ISSN: 0168-1702.  
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L37 ANSWER 63 OF 73 MEDLINE on STN DUPLICATE 23  
 TI The molecular basis for charge heterogeneity in human acid **alpha**  
**-glucosidase**.  
 SO BIOCHIMICA ET BIOPHYSICA ACTA, (1985 May 20) 829 (1) 44-50.  
 Journal code: 0217513. ISSN: 0006-3002.  
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 AN 85199952 MEDLINE

L37 ANSWER 64 OF 73 MEDLINE on STN DUPLICATE 24  
 TI Biosynthesis of intestinal microvillar proteins. Further characterization  
 of the intracellular processing and transport.  
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 Journal code: 0155157. ISSN: 0014-5793.  
 AU Danielsen E M; Cowell G M  
 AN 84108920 MEDLINE

L37 ANSWER 65 OF 73 MEDLINE on STN DUPLICATE 25  
 TI On the role of oligosaccharide trimming in the maturation of Sindbis and  
 influenza virus.  
 SO ARCHIVES OF VIROLOGY, (1984) 81 (1-2) 25-39.  
 Journal code: 7506870. ISSN: 0304-8608.  
 AU Datema R; Romero P A; Rott R; Schwarz R T  
 AN 84256079 MEDLINE

L37 ANSWER 66 OF 73 MEDLINE on STN  
 TI The mod A mutant of Dictyostelium discoideum is missing the alpha  
 1,3-glucosidase involved in asparagine-linked oligosaccharide processing.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1983 Dec 25) 258 (24) 14880-4.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Freeze H H; Yeh R; Miller A L; Kornfeld S  
 AN 84087880 MEDLINE

L37 ANSWER 67 OF 73 MEDLINE on STN DUPLICATE 26  
 TI 1-deoxynojirimycin impairs oligosaccharide processing of alpha  
 1-proteinase inhibitor and inhibits its secretion in primary cultures of  
 rat hepatocytes.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1983 Oct 25) 258 (20) 12203-9.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Gross V; Andus T; Tran-Thi T A; Schwarz R T; Decker K; Heinrich P C  
 AN 84032392 MEDLINE

L37 ANSWER 68 OF 73 MEDLINE on STN DUPLICATE 27  
 TI Biosynthesis of intestinal microvillar proteins. Pulse-chase labelling  
 studies on maltase-glucoamylase, aminopeptidase A and dipeptidyl peptidase  
 IV.  
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 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Danielsen E M; Sjostrom H; Noren O  
 AN 83230712 MEDLINE

L37 ANSWER 69 OF 73 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.  
 on STN DUPLICATE 28  
 TI Biosynthesis of intestinal microvillar proteins. Role of the Golgi complex  
 and microtubules.  
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 CODEN: BIJOAK  
 AU Danielsen E.M.; Cowell G.M.; Poulsen S.S.  
 AN 83250332 EMBASE

L37 ANSWER 70 OF 73 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 DUPLICATE 29  
 TI INHIBITION OF N LINKED COMPLEX OLIGO SACCHARIDE FORMATION BY 1 DEOXY  
 NOJIRIMYCIN AN INHIBITOR OF PROCESSING GLUCOSIDASES.  
 SO J BIOL CHEM, (1982) 257 (23), 14155-14161.  
 CODEN: JBCHA3. ISSN: 0021-9258.  
 AU SAUNIER B; KILKER R D JR; TKACZ J S; QUARONI A; HERSCOVICS A  
 AN 1984:219558 BIOSIS

L37 ANSWER 71 OF 73 MEDLINE on STN  
 TI A lectin-resistant mouse lymphoma cell line is deficient in glucosidase  
 II, a glycoprotein-processing enzyme.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1982 Sep 10) 257 (17) 10357-63.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Reitman M L; Trowbridge I S; Kornfeld S  
 AN 82265696 MEDLINE

L37 ANSWER 72 OF 73 MEDLINE on STN DUPLICATE 30  
 TI Inhibition of formation of complex oligosaccharides by the glucosidase  
 inhibitor bromoconduritol.  
 SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF  
 AMERICA, (1982 Nov) 79 (22) 6787-91.  
 Journal code: 7505876. ISSN: 0027-8424.  
 AU Datema R; Romero P A; Legler G; Schwarz R T  
 AN 83091045 MEDLINE

L37 ANSWER 73 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Partial purification from Saccharomyces cerevisiae of a soluble

glucosidase which removes the terminal glucose from the oligosaccharide  
Glc3Man9GlcNAc2

SO Journal of Biological Chemistry (1981), 256(10), 5299-303  
CODEN: JBCHA3; ISSN: 0021-9258  
AU Kilker, Richard D., Jr.; Saunier, Brigitte; Tkacz, Jan S.; Herscovics,  
Annette  
AN 1981:456938 HCAPLUS  
DN 95:56938

=> d ab 3,10,19,50,63

L37 ANSWER 3 OF 73 HCAPLUS COPYRIGHT 2003 ACS on STN

AB Fabry disease is an X-linked inborn error of glycolipid metab. caused by deficiency of the lysosomal enzyme .alpha.-galactosidase A. This enzyme is responsible for the hydrolysis of terminal .alpha.-galactoside linkages in various glycolipids. An improved method of prodn. of recombinant .alpha.-galactosidase A for use in humans is needed in order to develop new approaches for enzyme therapy. Human .alpha.-galactosidase A for use in enzyme therapy has previously been obtained from human sources and from recombinant clones derived from human cells, CHO cells, and insect cells. In this report we describe the construction of clones of the methylotrophic yeast *Pichia pastoris* that produce recombinant human .alpha.-galactosidase A. Recombinant human .alpha.-galactosidase A is secreted by these *Pichia* clones and the level of prodn. is more than 30-fold greater than that of previously used methods. Prodn. was optimized using variations in temp., pH, cDNA copy no., and other variables using shake flasks and a bioreactor. Expression of the human enzyme increased with increasing cDNA copy no. at 25.degree.C, but not at the std. growth temp. of 30.degree.C. The recombinant .alpha.-galactosidase A was purified to homogeneity using ion exchange (POROS 20 CM, POROS 20 HQ) and hydrophobic (Toso-ether, Toso-butyl) chromatog. with a BioCAD HPLC Workstation. Purified recombinant .alpha.-galactosidase A was taken up by fibroblasts derived from Fabry disease patients and normal enzyme levels could be restored under these conditions. Anal. of the carbohydrate present on the recombinant enzyme indicated the predominant presence of N-linked **high-mannose** structures rather than complex carbohydrates. (c) 2000 Academic Press.

L37 ANSWER 10 OF 73 MEDLINE on STN DUPLICATE 3

AB Homonojirimycin (HNJ) and N-methylhomonojirimycin (MHNJ) were tested as inhibitors of the purified glycoprotein processing enzymes, glucosidase I and glucosidase II. MHNJ was a reasonably good inhibitor of glucosidase I ( $K_i = 1 \times 10^{-6}$  M) and was about three times as effective on this enzyme as was HNJ. On the other hand, HNJ inhibited glucosidase II with a  $K_i$  of about  $1 \times 10^{-6}$  M, whereas MHNJ was three times less effective ( $K_i = 3 \times 10^{-5}$  M). However, the butyl derivative of HNJ had very low activity toward these two processing glucosidases. HNJ and its methyl derivative were also tested in vivo using influenza virus-infected MDCK cells, and measuring the inhibition of N-linked oligosaccharide processing of the viral envelope glycoproteins. With 100 micrograms/ml of MHNJ in the medium, essentially all of the N-linked oligosaccharide chains of the virus were of the "**high-mannose**" type with the major structure being characterized as Glc3Man9(GlcNAc)2. Similar results were obtained with HNJ although this compound was less effective in vivo as well as in vitro. These results are in keeping with these inhibitors being effective at the glucosidase I step. Both inhibitors were also tested in MDCK cell cultures to determine whether they affected the in vivo synthesis of proteins, or of lipid-linked saccharides. In contrast to deoxynojirimycin, which has been reported to inhibit the formation of lipid-linked saccharides, no effects were seen on either the incorporation of mannose into lipid-linked saccharides or the incorporation of leucine into protein.

L37 ANSWER 19 OF 73 MEDLINE on STN

AB Glucosidase I, the first enzyme in the N-linked oligosaccharide processing pathway, cleaves the distal alpha 1,2-linked glucose residue from the Glc3-Man9-GlcNAc2 oligosaccharide precursor highly specifically. A human hippocampus cDNA library was screened against oligonucleotide probes, generated by PCR using primers derived from the amino acid sequences of tryptic peptides of pig liver glucosidase I. Two independent lambda clones were isolated which allowed the construction of a full-length glucosidase I cDNA of 2881 bp. This cDNA construct encodes, in a single open reading frame, a polypeptide of 834 amino acids corresponding to a molecular mass of 92 kDa. The 92-kDa protein contains a single N-glycosylation site of the Asn-Xaa-Thr/Ser type at Asn655, as well as a strongly hydrophobic sequence close to its N-terminus (amino acids 38-58) which, most likely, functions as a transmembrane anchor. The amino acid sequences of all tryptic peptides of the pig liver enzyme were found, with little deviation, within the coding sequence. This demonstrates the authenticity of the cDNA construct and the close evolutionary relationship between the enzymes from human hippocampus and pig liver. In contrast, the nucleotide and amino acid sequence revealed no homology with other processing enzymes cloned so far. Transfection of COS 1 cells with the glucosidase I cDNA construct resulted in overexpression (about fourfold) of enzymic activity, which was inhibited strongly by 1-deoxynojirimycin or N,N-dimethyl-deoxynojirimycin. The expressed enzyme, with a molecular mass of 95 kDa, is degraded by endoglycosidase H to a 93-kDa form, indicating that it carries a **high-mannose** oligosaccharide chain at Asn655. The presence of this glycan is in line with the localization of glucosidase I in the lumen of the endoplasmic reticulum, shown by immunofluorescence microscopy. The hydrophobicity profile as well as the removal by trypsin of an approximately 4-kDa polypeptide from the membrane-associated glucosidase I in intact microsomal structures, supports the view that the enzyme is a type-II transmembrane glycoprotein, which contains a short cytosolic tail of approximately 37 amino acids, followed by a single transmembrane domain and a large C-terminal catalytic domain located on the luminal side of the endoplasmic reticulum membrane.

L37 ANSWER 50 OF 73 MEDLINE on STN

DUPLICATE 16

AB Attempts at treatment of glycogenosis type II and other lysosomal storage disorders by enzyme replacement have been reported. Parenteral enzyme administration has been ineffectual. Treatment by bone marrow transplantation is currently under investigation. We have used cultured skeletal muscle cells from a patient with infantile glycogenosis type II to study fundamental aspects of enzyme replacement therapy. Efficient uptake of acid **alpha-glucosidase** was achieved by using the mannose-6-phosphate receptor on the cell surface as a target for an enzyme precursor with phosphorylated **high-mannose** types carbohydrate chains purified from human urine. We found that the enzyme was channeled to the lysosomes and converted to mature acid **alpha-glucosidase**. Glycogen storage was reversed. The results are discussed in relation to treatment of glycogenosis type II.

L37 ANSWER 63 OF 73 MEDLINE on STN

DUPLICATE 23

AB The molecular basis for charge heterogeneity in human hepatic **alpha-glucosidase** (alpha-D-glucoside glucohydrolase, EC 3.2.1.20) was determined by analysis of the carbohydrate and polypeptide components of the enzyme. Only small remnants of **high mannose** chains that contained neither sialic acid nor mannose 6-phosphate were detected in the carbohydrate structure. Four enzymatically active forms of **alpha-glucosidase** separated by chromatofocusing were analyzed by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and were found to contain different polypeptides. The absence of charged residues in oligosaccharide chains and variability in the polypeptide subunits of the charge forms of hepatic **alpha-glucosidase** suggest that

charge heterogeneity results from differences in the protein structure of the charge forms. The pattern of differences in the polypeptide subunits suggests that the charge forms for hepatic **alpha-glucosidase** may be the product of proteolysis.

=> s lysosom? and (high mannose)

FILE 'MEDLINE'

38027 LYSOSOM?  
1147840 HIGH  
16633 MANNOSE  
1894 HIGH MANNOSE  
(HIGH(W)MANNOSE)

L38 182 LYSOSOM? AND (HIGH MANNOSE)

FILE 'SCISEARCH'

21942 LYSOSOM?  
1662292 HIGH  
12311 MANNOSE  
1232 HIGH MANNOSE  
(HIGH(W)MANNOSE)

L39 101 LYSOSOM? AND (HIGH MANNOSE)

FILE 'LIFESCI'

6942 LYSOSOM?  
319327 "HIGH"  
5538 "MANNOSE"  
619 HIGH MANNOSE  
("HIGH" (W) "MANNOSE")

L40 32 LYSOSOM? AND (HIGH MANNOSE)

FILE 'BIOTECHDS'

422 LYSOSOM?  
59408 HIGH  
1594 MANNOSE  
124 HIGH MANNOSE  
(HIGH(W)MANNOSE)

L41 3 LYSOSOM? AND (HIGH MANNOSE)

FILE 'BIOSIS'

37524 LYSOSOM?  
1288397 HIGH  
19310 MANNOSE  
2009 HIGH MANNOSE  
(HIGH(W)MANNOSE)

L42 175 LYSOSOM? AND (HIGH MANNOSE)

FILE 'EMBASE'

29348 LYSOSOM?  
1110952 "HIGH"  
12998 "MANNOSE"  
1552 HIGH MANNOSE  
("HIGH" (W) "MANNOSE")

L43 132 LYSOSOM? AND (HIGH MANNOSE)

FILE 'HCAPLUS'

32919 LYSOSOM?  
3235469 HIGH  
34625 MANNOSE  
2232 HIGH MANNOSE  
(HIGH(W)MANNOSE)

L44 188 LYSOSOM? AND (HIGH MANNOSE)

FILE 'NTIS'



```

        279 LYSOSOM?
316508 HIGH
        112 MANNOSE
          6 HIGH MANNOSE
            (HIGH(W) MANNOSE)
L45      1 LYSOSOM? AND (HIGH MANNOSE)

FILE 'ESBIOBASE'
        7785 LYSOSOM?
376465 HIGH
        4745 MANNOSE
          569 HIGH MANNOSE
            (HIGH(W) MANNOSE)
L46      48 LYSOSOM? AND (HIGH MANNOSE)

FILE 'BIOTECHNO'
        8463 LYSOSOM?
290618 HIGH
        7018 MANNOSE
          1167 HIGH MANNOSE
            (HIGH(W) MANNOSE)
L47      99 LYSOSOM? AND (HIGH MANNOSE)

FILE 'WPIDS'
        521 LYSOSOM?
1732738 HIGH
        2350 MANNOSE
          42 HIGH MANNOSE
            (HIGH(W) MANNOSE)
L48      3 LYSOSOM? AND (HIGH MANNOSE)

TOTAL FOR ALL FILES
L49      964 LYSOSOM? AND (HIGH MANNOSE)

=> s l49 and (gaa or acid glucosidase#)
FILE 'MEDLINE'
        733 GAA
1199200 ACID
        10022 GLUCOSIDASE#
          19 ACID GLUCOSIDASE#
            (ACID(W) GLUCOSIDASE#)
L50      0 L38 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'SCISEARCH'
        778 GAA
937471 ACID
        7752 GLUCOSIDASE#
          9 ACID GLUCOSIDASE#
            (ACID(W) GLUCOSIDASE#)
L51      0 L39 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'LIFESCI'
        336 GAA
264242 "ACID"
        3858 GLUCOSIDASE#
          0 ACID GLUCOSIDASE#
            ("ACID" (W) GLUCOSIDASE#)
L52      0 L40 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'BIOTECHDS'
        155 GAA
104314 ACID
        3042 GLUCOSIDASE#
          0 ACID GLUCOSIDASE#

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                (ACID(W) GLUCOSIDASE#)
L53             0 L41 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'BIOSIS'
    804 GAA
    1136107 ACID
    10653 GLUCOSIDASE#
    17 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L54             0 L42 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'EMBASE'
    612 GAA
    1167607 "ACID"
    8954 GLUCOSIDASE#
    13 ACID GLUCOSIDASE#
        ("ACID" (W) GLUCOSIDASE#)
L55             0 L43 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'HCAPLUS'
    1094 GAA
    3722508 ACID
    15609 GLUCOSIDASE#
    122 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L56             0 L44 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'NTIS'
    158 GAA
    43058 ACID
    91 GLUCOSIDASE#
    0 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L57             0 L45 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'ESBIOBASE'
    424 GAA
    262028 ACID
    5065 GLUCOSIDASE#
    6 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L58             0 L46 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'BIOTECHNO'
    437 GAA
    338899 ACID
    4163 GLUCOSIDASE#
    0 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L59             0 L47 AND (GAA OR ACID GLUCOSIDASE#)

FILE 'WPIDS'
    185 GAA
    802462 ACID
    1371 GLUCOSIDASE#
    0 ACID GLUCOSIDASE#
        (ACID(W) GLUCOSIDASE#)
L60             0 L48 AND (GAA OR ACID GLUCOSIDASE#)

TOTAL FOR ALL FILES
L61             0 L49 AND (GAA OR ACID GLUCOSIDASE#)

=> s l49 and glucosidase#
FILE 'MEDLINE'

```

```

10022 GLUCOSIDASE#
L62      16 L38 AND GLUCOSIDASE#

FILE 'SCISEARCH'
      7752 GLUCOSIDASE#
L63      7 L39 AND GLUCOSIDASE#

FILE 'LIFESCI'
      3858 GLUCOSIDASE#
L64      1 L40 AND GLUCOSIDASE#

FILE 'BIOTECHDS'
      3042 GLUCOSIDASE#
L65      1 L41 AND GLUCOSIDASE#

FILE 'BIOSIS'
      10653 GLUCOSIDASE#
L66      11 L42 AND GLUCOSIDASE#

FILE 'EMBASE'
      8954 GLUCOSIDASE#
L67      8 L43 AND GLUCOSIDASE#

FILE 'HCAPLUS'
      15609 GLUCOSIDASE#
L68      13 L44 AND GLUCOSIDASE#

FILE 'NTIS'
      91 GLUCOSIDASE#
L69      0 L45 AND GLUCOSIDASE#

FILE 'ESBIOBASE'
      5065 GLUCOSIDASE#
L70      10 L46 AND GLUCOSIDASE#

FILE 'BIOTECHNO'
      4163 GLUCOSIDASE#
L71      7 L47 AND GLUCOSIDASE#

FILE 'WPIDS'
      1371 GLUCOSIDASE#
L72      2 L48 AND GLUCOSIDASE#

TOTAL FOR ALL FILES
L73      76 L49 AND GLUCOSIDASE#

```

```

=> dup rem l73
PROCESSING COMPLETED FOR L73
L74      34 DUP REM L73 (42 DUPLICATES REMOVED)

```

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=> d tot

```

```

L74  ANSWER 1 OF 34  HCAPLUS  COPYRIGHT 2003 ACS on STN
TI   Methods of producing high mannose glycoproteins in
      complex carbohydrate deficient cells
SO   U.S. Pat. Appl. Publ., 46 pp.
      CODEN: USXXCO
IN   Canfield, William M.
AN   2003:511963  HCAPLUS
DN   139:84070

```

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003124652	A1	20030703	US 2001-23889	20011221
	WO 2003057710	A2	20030717	WO 2002-US37618	20021219

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

L74 ANSWER 2 OF 34 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
 TI Producing recombinant proteins e.g., glucocerebrosidase with **high**  
**-mannose** carbohydrate structure, involves continuously  
 culturing cells of *Pichia pastoris* that comprise DNA molecule encoding  
 protein of interest;  
 for use in **lysosomal** acid lipase, alpha-glycosidase,  
 alpha-L-iduronidase, alpha-galactosidase, iduronate sulfatase,  
 galactosamine-6-sulfatase, beta-galactosidase, arylsulfatase and  
 recombinant protein preparation

AU WAN N; HOPPE H; GOODRICK J C; SCHILLING B M  
 AN 2002-18508 BIOTECHDS  
 PI WO 2002040686 23 May 2002

L74 ANSWER 3 OF 34 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 2  
 TI Use of GlcNAc-phosphotransferase and phosphodiester .alpha.-GlcNAcase in  
 production of highly phosphorylated **lysosomal** hydrolases useful  
 in treatment of **lysosomal** storage diseases

SO PCT Int. Appl., 91 pp.

CODEN: PIXXD2

IN Canfield, William M.

AN 2001:208390 HCAPLUS

DN 134:248843

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001019955	A2	20010322	WO 2000-US21970	20000914
WO 2001019955	A3	20011004		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6534300	B1	20030318	US 2000-635872	20000810
US 6537785	B1	20030325	US 2000-636077	20000810
AU 2000073303	A5	20010417	AU 2000-73303	20000914
BR 2000014514	A	20020723	BR 2000-14514	20000914
EP 1224266	A2	20020724	EP 2000-961335	20000914

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003509043	T2	20030311	JP 2001-523727	20000914
US 2002025550	A1	20020228	US 2001-895072	20010702
US 2002150981	A1	20021017	US 2001-986552	20011109
US 2003148460	A1	20030807	US 2002-306686	20021129

L74 ANSWER 4 OF 34 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI **Lysosomal** cysteine protease, cathepsin H, is targeted to  
**lysosomes** by the mannose 6-phosphate-independent system in rat  
 hepatocytes

SO BIOLOGICAL & PHARMACEUTICAL BULLETIN, (JUL 2000) Vol. 23, No. 7, pp.

805-809.

Publisher: PHARMACEUTICAL SOC JAPAN, 2-12-15-201 SHIBUYA, SHIBUYA-KU,  
TOKYO 150, JAPAN.

ISSN: 0918-6158.

AU Tanaka Y; Tanaka R; Himeno M (Reprint)

AN 2000:528021 SCISEARCH

L74 ANSWER 5 OF 34 HCAPLUS COPYRIGHT 2003 ACS on STN

TI Expression and Characterization of Glycosylated and Catalytically Active  
Recombinant Human  $\alpha$ -Galactosidase A Produced in *Pichia pastoris*  
SO Protein Expression and Purification (2000), 20, 472-484  
CODEN: PEXPEJ; ISSN: 1046-5928

AU Chen, Yingsi; Jin, Ming; Egborge, Tobore; Coppola, George; Andre, Jamie;  
Calhoun, David H.

AN 2000:818937 HCAPLUS

DN 134:146439

L74 ANSWER 6 OF 34 MEDLINE on STN

DUPLICATE 3

TI Glucose persistence on **high-mannose** oligosaccharides  
selectively inhibits the macroautophagic sequestration of N-linked  
glycoproteins.

SO BIOCHEMICAL JOURNAL, (2000 Feb 1) 345 Pt 3 459-66.

Journal code: 2984726R. ISSN: 0264-6021.

AU Ogier-Denis E; Bauvy C; Cluzeaud F; Vandewalle A; Codogno P

AN 2000115078 MEDLINE

L74 ANSWER 7 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on  
STN

AN 2000064190 ESBIODBASE

TI Human  $\alpha$ -N-acetylgalactosaminidase: Site occupancy and structure of  
N-linked oligosaccharides

AU Ohta M.; Ohnishi T.; Ioannou Y.A.; Hodgson M.E.; Matsuura F.; Desnick  
R.J.

CS R.J. Desnick, Department of Human Genetics, Mount Sinai School of  
Medicine, Fifth Avenue and 100th Street, New York, NY 10029-6574, United  
States.

SO Glycobiology, (2000), 10/3 (251-261), 47 reference(s)

CODEN: GLYCE3 ISSN: 0959-6658

DT Journal; Article

CY United Kingdom

LA English

SL English

L74 ANSWER 8 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on  
STN

AN 1999204833 ESBIODBASE

TI Role of N-linked carbohydrate processing and calnexin in human hepatic  
lipase secretion

AU Boedeker J.C.; Doolittle M.; Santamarina-Fojo S.; White A.L.

CS J.C. Boedeker, Center for Human Nutrition, University of Texas SW Medical  
Ctr., Dallas, TX 75235, United States.

SO Journal of Lipid Research, (1999), 40/9 (1627-1635), 45 reference(s)

CODEN: JLPRAW ISSN: 0022-2275

DT Journal; Article

CY United States

LA English

SL English

L74 ANSWER 9 OF 34 MEDLINE on STN

DUPLICATE 4

TI Trypanosoma cruzi calreticulin is a lectin that binds monoglucosylated  
oligosaccharides but not protein moieties of glycoproteins.

SO MOLECULAR BIOLOGY OF THE CELL, (1999 May) 10 (5) 1381-94.

Journal code: 9201390. ISSN: 1059-1524.

AU Labriola C; Cazzulo J J; Parodi A J

AN 1999250150 MEDLINE

L74 ANSWER 10 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
on STN

AN 1999150669 ESBIODBASE

TI Purification and properties of major .alpha.-D-mannosidase in the luminal  
fluid of porcine epididymis

AU Jin Y.Z.; Dacheux F.; Dacheux J.L.; Bannai S.; Sugita Y.; Okamura N.

CS N. Okamura, College Medical Technology, University of Tsukuba, Tsukuba,  
Ibaraki 305-8577, Japan.  
E-mail: naooka@igaku.md.tsukuba.ac.jp

SO Biochimica et Biophysica Acta - Protein Structure and Molecular  
Enzymology, (1999), 1432/2 (382-392), 35 reference(s)  
CODEN: BBAEDZ ISSN: 0167-4838

PUI S016748389900117X

DT Journal; Article

CY Netherlands

LA English

SL English

L74 ANSWER 11 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
on STN

AN 1998093557 ESBIODBASE

TI Human .alpha.-galactosidase A: Characterization of the N-linked  
oligosaccharides on the intracellular and secreted glycoforms  
overexpressed by Chinese hamster ovary cells

AU Matsuura F.; Ohta M.; Ioannou Y.A.; Desnick R.J.

CS R.J. Desnick, Department of Human Genetics, Mount Sinai School of  
Medicine, Fifth Avenue and 100th Street, New York, NY 10029-6574, United  
States.

SO Glycobiology, (1998), 8/4 (329-339), 40 reference(s)  
CODEN: GLYCE3 ISSN: 0959-6658

DT Journal; Article

CY United Kingdom

LA English

SL English

L74 ANSWER 12 OF 34 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Carbohydrate structures of recombinant human alpha-L-iduronidase secreted  
by Chinese hamster ovary cells

SO JOURNAL OF BIOLOGICAL CHEMISTRY, (5 SEP 1997) Vol. 272, No. 36, pp.  
22758-22765.  
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE  
PIKE, BETHESDA, MD 20814.  
ISSN: 0021-9258.

AU Zhao K W; Faull K F; Kakkis E D; Neufeld E F (Reprint)

AN 97:688118 SCISEARCH

L74 ANSWER 13 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
on STN

AN 1997077860 ESBIODBASE

TI Human lactase-phlorizin hydrolase expressed in COS-1 cells is  
proteolytically processed by the **lysosomal** pathway

AU Wuthrich M.; Sterchi E.E.

CS E.E. Sterchi, Institute Biochemistry, University of Bern, 3012 Bern,  
Switzerland.  
E-mail: sterch@mci.unibe.ch

SO FEBS Letters, (1997), 405/3 (321-327), 21 reference(s)  
CODEN: FEBLAL ISSN: 0014-5793

PUI S0014579397002068

DT Journal; Article

CY Netherlands

LA English

SL English

L74 ANSWER 14 OF 34 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Consequences of disrupting the gene that encodes alpha-**glucosidase**  
 II in the N-linked oligosaccharide biosynthesis pathway of Dictyostelium  
 discoideum  
 SO DEVELOPMENTAL GENETICS, (20 NOV 1997) Vol. 21, No. 3, pp. 177-186.  
 Publisher: WILEY-LISS, DIV JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK,  
 NY 10158-0012.  
 ISSN: 0192-253X.  
 AU Freeze H H (Reprint); Lammertz M; Iranfar N; Fuller D; Panneerselvam K;  
 Loomis W F  
 AN 97:902261 SCISEARCH

L74 ANSWER 15 OF 34 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI GLYCOSYLATION AND PHOSPHORYLATION OF **LYSOSOMAL**  
 GLYCOSYLASPARAGINASE  
 SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (01 APR 1996) Vol. 328, No. 1,  
 pp. 73-77.  
 ISSN: 0003-9861.  
 AU PARK H; VETTESEDADEY M; ARONSON N N (Reprint)  
 AN 96:279648 SCISEARCH

L74 ANSWER 16 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
 on STN  
 AN 1995117162 ESBIODBASE  
 TI Characterization of the mannose 6-phosphate-dependent pathway of  
**lysosomal** enzyme routing in an invertebrate  
 AU Alvarez V.; Parodi A.J.; Couso R.  
 CS A.J. Parodi, Inst. Investigaciones Bioquimicas, Fundacion Campomar,  
 Antonio Machado 151, 1405 Buenos Aires, Argentina.  
 SO Biochemical Journal, (1995), 310/2 (589-595)  
 CODEN: BIJOAK ISSN: 0264-6021  
 DT Journal; Article  
 CY United Kingdom  
 LA English  
 SL English

L74 ANSWER 17 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
 on STN  
 AN 1994116284 ESBIODBASE  
 TI Purification and enzymatic properties of peptide:N-glycanase from C3H  
 mouse-derived L-929 fibroblast cells. Possible widespread occurrence of  
 post- translational remodeling of proteins by N-deglycosylation  
 AU Suzuki T.; Seko A.; Kitajima K.; Inoue Y.; Inoue S.  
 CS Y. Inoue, Biophysics/Biochemistry Department, Faculty of Science,  
 University of Tokyo, Hongo-7, Tokyo 113, Japan.  
 SO Journal of Biological Chemistry, (1994), 269/26 (17611-17618)  
 CODEN: JBCHA3 ISSN: 0021-9258  
 DT Journal; Article  
 CY United States  
 LA English  
 SL English

L74 ANSWER 18 OF 34 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V.  
 on STN  
 AN 1994101223 ESBIODBASE  
 TI Lysine is a common determinant for mannose phosphorylation of  
**lysosomal** proteins  
 AU Cuozzo J.W.; Sahagian G.G.  
 CS G.G. Sahagian, Dept. of Physiology, Tufts University, 136 Harrison Ave.,  
 Boston, MA 02111, United States.  
 SO Journal of Biological Chemistry, (1994), 269/20 (14490-14496)  
 CODEN: JBCHA3 ISSN: 0021-9258  
 DT Journal; Article

CY United States  
LA English  
SL English

L74 ANSWER 19 OF 34 MEDLINE on STN DUPLICATE 5  
TI Endocytosis of **lysosomal** acid phosphatase; involvement of  
mannose receptor and effect of lectins.  
SO BIOCHEMISTRY AND MOLECULAR BIOLOGY INTERNATIONAL, (1994 Aug) 33 (6)  
1201-6.  
Journal code: 9306673. ISSN: 1039-9712.  
AU Imai K; Yoshimura T  
AN 95102526 MEDLINE

L74 ANSWER 20 OF 34 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.  
on STN DUPLICATE 6  
TI Intracellular degradation and reduced cell-surface expression of  
sucrase-isomaltase in heat shocked Caco-2 cells.  
SO Biochemical Journal, (1993) 292/3 (725-734).  
ISSN: 0264-6021 CODEN: BIJOAK  
AU Quaroni A.; Paul E.C.A.; Nichols B.L.  
AN 93210216 EMBASE

L74 ANSWER 21 OF 34 MEDLINE on STN DUPLICATE 7  
TI Glycosidase inhibitors: inhibitors of N-linked oligosaccharide processing.  
SO FASEB JOURNAL, (1991 Dec) 5 (15) 3055-63. Ref: 60  
Journal code: 8804484. ISSN: 0892-6638.  
AU Elbein A D  
AN 92077332 MEDLINE

L74 ANSWER 22 OF 34 MEDLINE on STN  
TI Function of oligosaccharide modification in glucocerebrosidase, a  
membrane-associated **lysosomal** hydrolase.  
SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (1990 Aug 17) 191 (3) 669-77.  
Journal code: 0107600. ISSN: 0014-2956.  
AU Van Weely S; Aerts J M; Van Leeuwen M B; Heikoop J C; Donker-Koopman W E;  
Barranger J A; Tager J M; Schram A W  
AN 90361052 MEDLINE

L74 ANSWER 23 OF 34 MEDLINE on STN DUPLICATE 8  
TI Posttranslational processing of human **lysosomal** acid beta-  
**glucosidase**: a continuum of defects in Gaucher disease type 1 and  
type 2 fibroblasts.  
SO AMERICAN JOURNAL OF HUMAN GENETICS, (1989 May) 44 (5) 741-50.  
Journal code: 0370475. ISSN: 0002-9297.  
AU Bergmann J E; Grabowski G A  
AN 89205558 MEDLINE

L74 ANSWER 24 OF 34 MEDLINE on STN  
TI Glycosylation and processing of high levels of active human  
glucocerebrosidase in invertebrate cells using a baculovirus expression  
vector.  
SO DNA, (1988 Mar) 7 (2) 99-106.  
Journal code: 8302432. ISSN: 0198-0238.  
AU Martin B M; Tsuji S; LaMarca M E; Maysak K; Eliason W; Ginns E I  
AN 88195783 MEDLINE

L74 ANSWER 25 OF 34 MEDLINE on STN DUPLICATE 9  
TI Receptor-mediated uptake of acid alpha-**glucosidase** corrects  
**lysosomal** glycogen storage in cultured skeletal muscle.  
SO PEDIATRIC RESEARCH, (1988 Jul) 24 (1) 90-4.  
Journal code: 0100714. ISSN: 0031-3998.  
AU Van der Ploeg A T; Loonen M C; Bolhuis P A; Busch H M; Reuser A J;  
Galjaard H  
AN 88319846 MEDLINE



L74 ANSWER 26 OF 34 MEDLINE on STN DUPLICATE 10  
 TI Posttranslational processing of a human myeloid **lysosomal** protein, myeloperoxidase.  
 SO BLOOD, (1987 Oct) 70 (4) 1143-50.  
 Journal code: 7603509. ISSN: 0006-4971.  
 AU Nauseef W M  
 AN 88000999 MEDLINE

L74 ANSWER 27 OF 34 MEDLINE on STN  
 TI Lectin-specific targeting of **lysosomal** enzymes to reticuloendothelial cells.  
 SO METHODS IN ENZYMOLOGY, (1987) 149 25-42.  
 Journal code: 0212271. ISSN: 0076-6879.  
 AU Murray G J  
 AN 88093788 MEDLINE

L74 ANSWER 28 OF 34 MEDLINE on STN  
 TI Biosynthesis of the **lysosomal** enzyme glucocerebrosidase.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1985 Nov 15) 260 (26) 14319-24.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Erickson A H; Ginns E I; Barranger J A  
 AN 86033922 MEDLINE

L74 ANSWER 29 OF 34 MEDLINE on STN DUPLICATE 11  
 TI Carbohydrates of **lysosomal** enzymes secreted by Tetrahymena pyriformis.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1985 Nov 15) 260 (26) 13941-6.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Taniguchi T; Mizuochi T; Banno Y; Nozawa Y; Kobata A  
 AN 86033869 MEDLINE

L74 ANSWER 30 OF 34 MEDLINE on STN  
 TI Mannose 6-sulfate is present in the N-linked oligosaccharides of **lysosomal** enzymes of Dictyostelium.  
 SO ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS, (1985 Dec) 243 (2) 690-3.  
 Journal code: 0372430. ISSN: 0003-9861.  
 AU Freeze H H  
 AN 86102157 MEDLINE

L74 ANSWER 31 OF 34 MEDLINE on STN  
 TI The molecular basis for charge heterogeneity in human acid alpha-**glucosidase**.  
 SO BIOCHIMICA ET BIOPHYSICA ACTA, (1985 May 20) 829 (1) 44-50.  
 Journal code: 0217513. ISSN: 0006-3002.  
 AU Henkel R D; Chambers J P; Williams J C  
 AN 85199952 MEDLINE

L74 ANSWER 32 OF 34 MEDLINE on STN DUPLICATE 12  
 TI The mod A mutant of Dictyostelium discoideum is missing the alpha 1,3-**glucosidase** involved in asparagine-linked oligosaccharide processing.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1983 Dec 25) 258 (24) 14880-4.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Freeze H H; Yeh R; Miller A L; Kornfeld S  
 AN 84087880 MEDLINE

L74 ANSWER 33 OF 34 MEDLINE on STN DUPLICATE 13  
 TI Structural analysis of the asparagine-linked oligosaccharides from three **lysosomal** enzymes of Dictyostelium discoideum. Evidence for an unusual acid-stable phosphodiester.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1983 Dec 25) 258 (24) 14874-9.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Freeze H H; Yeh R; Miller A L; Kornfeld S

AN 84087879 MEDLINE

L74 ANSWER 34 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 14

TI **LYSOSOMAL** ENZYME PHOSPHORYLATION IN MOUSE LYMPHOMA CELL LINES  
WITH ALTERED ASPARAGINE LINKED OLIGO SACCHARIDES.

SO J BIOL CHEM, (1982) 257 (18), 10605-10612.  
CODEN: JBCHA3. ISSN: 0021-9258.

AU GABEL C A; KORNFELD S

AN 1983:329682 BIOSIS

=> d ab 19,27

L74 ANSWER 19 OF 34 MEDLINE on STN DUPLICATE 5

AB Acid phosphatase and beta-**glucosidase** are unique among  
**lysosomal** enzymes in that they have both **high**  
**mannose** and complex type sugar chains, whereas oligosaccharide  
chains of **lysosomal** enzymes in matrix are of **high**  
**mannose** type. We have previously shown that beta-  
**glucosidase** was endocytosed into macrophages via an unidentified  
receptor different from a mannose/fucose receptor (K. Imai, Cell Struct.  
Funct. 13, 325-332, 1988). Here, we show that uptake of acid phosphatase  
purified from rat liver **lysosomes** into rat macrophages was  
inhibited by ligands for a mannose/fucose receptor and was mediated via an  
apparently single binding site with Kuptake of 24.7 nM. These results  
indicate that acid phosphatase and beta-**glucosidase** recognize  
different types of receptors even if they have similar sugar chains.  
Polyvalent concanavalin A which binds both to the enzyme and to  
macrophages specifically stimulated the uptake in a dose dependent manner,  
whereas wheat germ agglutinin and phytohaemagglutinin did not.

L74 ANSWER 27 OF 34 MEDLINE on STN

AB The principles and methods used for enzymatic modification of the  
carbohydrate portion of glucocerebrosidase are similar to those performed  
by Ashwell and Morell, Stahl, and others. It is difficult to explain the  
lack of uptake of native enzyme through binding of the **high-**  
**mannose** type glycopeptide to Man/GlcNAc receptors since  
approximately 20% of the total oligosaccharides on the native enzyme are  
**high mannose** type. Possibly a requirement for multiple  
sites of attachment to the receptor is not met by a single **high-**  
**mannose** type oligosaccharide per molecule. Alternatively, the  
presence of complex type oligosaccharides on this enzyme, demonstrated by  
structural studies, may mask the mannose site and thus account for the  
poor uptake of native enzyme. The ability to successfully deglycosylate  
any protein or enzyme in order to specifically target a selected cell type  
requires that there be (1) an available source of pure enzyme; (2)  
specific exoglycosidases of high specific activity available either  
commercially or relatively easily purified; (3) chemical or biochemical  
means available for the testing of the product, preferably at each step;  
and (4) a means of separating the glycosidases used from the desired  
enzyme product. The characteristic and unique accumulation of  
glucocerebroside only in cells of the monocyte-histiocyte series, makes  
Gaucher's disease an excellent prototype for the study of enzyme  
replacement therapy. The principles demonstrated for the enzymatic  
deglycosylation of glucocerebrosidase may be applied to the cell-specific  
delivery of other glycoproteins as well. Other **lysosomal**  
diseases in which storage occurs in multiple cell types may be ameliorated  
by administration of macrophage-directed enzymes if, by so doing, storage  
material can be digested during the normal phagocytic turnover of  
senescent cells. Consideration of the kinetics of degradation and the  
structural features affecting the stability of enzymes in vivo are  
prerequisites to improving the bioengineering of targeted  
**lysosomal** enzymes. Animal and culture models have been developed

for the study of glucocerebrosidase delivery to specific cell types and substrate degradation. Other studies have progressed toward a definition not only of the receptors at the plasma membrane involved in the internalization of exogenous enzyme, but also of internal receptors or properties of the **lysosome** responsible for intracellular protein trafficking. A complete understanding of the forces acting to direct endogenous or exogenously supplied enzyme to a given subcellular organelle will require a synthesis of experimental results from all areas of glycoprotein research.

=> s alpha glycosidase#

FILE 'MEDLINE'

454313 ALPHA

4733 GLYCOSIDASE#

L75 39 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'SCISEARCH'

643876 ALPHA

4762 GLYCOSIDASE#

L76 42 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'LIFESCI'

147374 "ALPHA"

1358 GLYCOSIDASE#

L77 14 ALPHA GLYCOSIDASE#  
("ALPHA" (W) GLYCOSIDASE#)

FILE 'BIOTECHDS'

23979 ALPHA

537 GLYCOSIDASE#

L78 9 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'BIOSIS'

596697 ALPHA

5568 GLYCOSIDASE#

L79 87 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'EMBASE'

508813 "ALPHA"

4660 GLYCOSIDASE#

L80 54 ALPHA GLYCOSIDASE#  
("ALPHA" (W) GLYCOSIDASE#)

FILE 'HCAPLUS'

1434625 ALPHA

7312 GLYCOSIDASE#

L81 172 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'NTIS'

28426 ALPHA

49 GLYCOSIDASE#

L82 1 ALPHA GLYCOSIDASE#  
(ALPHA (W) GLYCOSIDASE#)

FILE 'ESBIOBASE'

176805 ALPHA

1621 GLYCOSIDASE#

L83 11 ALPHA GLYCOSIDASE#

(ALPHA(W) GLYCOSIDASE#)

FILE 'BIOTECHNO'

183303 ALPHA

2589 GLYCOSIDASE#

L84 13 ALPHA GLYCOSIDASE#  
(ALPHA(W) GLYCOSIDASE#)

FILE 'WPIDS'

165002 ALPHA

525 GLYCOSIDASE#

L85 47 ALPHA GLYCOSIDASE#  
(ALPHA(W) GLYCOSIDASE#)

TOTAL FOR ALL FILES

L86 489 ALPHA GLYCOSIDASE#

=> s l86 and (high mannose)

FILE 'MEDLINE'

1147840 HIGH

16633 MANNOSE

1894 HIGH MANNOSE

(HIGH(W) MANNOSE)

L87 0 L75 AND (HIGH MANNOSE)

FILE 'SCISEARCH'

1662292 HIGH

12311 MANNOSE

1232 HIGH MANNOSE

(HIGH(W) MANNOSE)

L88 0 L76 AND (HIGH MANNOSE)

FILE 'LIFESCI'

319327 "HIGH"

5538 "MANNOSE"

619 HIGH MANNOSE

("HIGH"(W) "MANNOSE")

L89 0 L77 AND (HIGH MANNOSE)

FILE 'BIOTECHDS'

59408 HIGH

1594 MANNOSE

124 HIGH MANNOSE

(HIGH(W) MANNOSE)

L90 1 L78 AND (HIGH MANNOSE)

FILE 'BIOSIS'

1288397 HIGH

19310 MANNOSE

2009 HIGH MANNOSE

(HIGH(W) MANNOSE)

L91 0 L79 AND (HIGH MANNOSE)

FILE 'EMBASE'

1110952 "HIGH"

12998 "MANNOSE"

1552 HIGH MANNOSE

("HIGH"(W) "MANNOSE")

L92 0 L80 AND (HIGH MANNOSE)

FILE 'HCAPLUS'

3235469 HIGH

34625 MANNOSE

2232 HIGH MANNOSE

(HIGH(W)MANNOSE)  
L93 0 L81 AND (HIGH MANNOSE)

FILE 'NTIS'  
316508 HIGH  
112 MANNOSE  
6 HIGH MANNOSE  
(HIGH(W)MANNOSE)  
L94 0 L82 AND (HIGH MANNOSE)

FILE 'ESBIOBASE'  
376465 HIGH  
4745 MANNOSE  
569 HIGH MANNOSE  
(HIGH(W)MANNOSE)  
L95 0 L83 AND (HIGH MANNOSE)

FILE 'BIOTECHNO'  
290618 HIGH  
7018 MANNOSE  
1167 HIGH MANNOSE  
(HIGH(W)MANNOSE)  
L96 0 L84 AND (HIGH MANNOSE)

FILE 'WPIDS'  
1732738 HIGH  
2350 MANNOSE  
42 HIGH MANNOSE  
(HIGH(W)MANNOSE)  
L97 1 L85 AND (HIGH MANNOSE)

TOTAL FOR ALL FILES  
L98 2 L86 AND (HIGH MANNOSE)

=> d tot

L98 ANSWER 1 OF 2 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
TI Producing recombinant proteins e.g., glucocerebrosidase with **high**  
-mannose carbohydrate structure, involves continuously  
culturing cells of Pichia pastoris that comprise DNA molecule encoding  
protein of interest;  
for use in lysosomal acid lipase, **alpha-glycosidase**  
, alpha-L-iduronidase, alpha-galactosidase, iduronate sulfatase,  
galactosamine-6-sulfatase, beta-galactosidase, arylsulfatase and  
recombinant protein preparation  
AU WAN N; HOPPE H; GOODRICK J C; SCHILLING B M  
AN 2002-18508 BIOTECHDS  
PI WO 2002040686 23 May 2002

L98 ANSWER 2 OF 2 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN  
TI Producing recombinant proteins e.g., glucocerebrosidase with **high**  
-mannose carbohydrate structure, involves continuously culturing  
cells of Pichia pastoris that comprise DNA molecule encoding protein of  
interest.  
PI WO 2002040686 A2 20020523 (200254)\* EN 40p C12N015-81  
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
W: AU CA JP  
AU 2002032803 A 20020527 (200261) C12N015-81  
US 2003064437 A1 20030403 (200325) C12P021-02  
IN GOODRICK, J C; HOPPE, H; SCHILLING, B M; WAN, N

=> s lysosomal hydrolase#  
FILE 'MEDLINE'

20572 LYSOSOMAL  
 68147 HYDROLASE#  
 L1 1018 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'SCISEARCH'  
 15268 LYSOSOMAL  
 14241 HYDROLASE#  
 L2 615 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'LIFESCI'  
 4624 "LYSOSOMAL"  
 4710 HYDROLASE#  
 L3 170 LYSOSOMAL HYDROLASE#  
 ("LYSOSOMAL" (W) HYDROLASE#)

FILE 'BIOTECHDS'  
 315 LYSOSOMAL  
 2095 HYDROLASE#  
 L4 10 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'BIOSIS'  
 24110 LYSOSOMAL  
 20829 HYDROLASE#  
 L5 1242 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'EMBASE'  
 18228 "LYSOSOMAL"  
 13984 HYDROLASE#  
 L6 970 LYSOSOMAL HYDROLASE#  
 ("LYSOSOMAL" (W) HYDROLASE#)

FILE 'HCAPLUS'  
 21860 LYSOSOMAL  
 21500 HYDROLASE#  
 L7 1109 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'NTIS'  
 160 LYSOSOMAL  
 1125 HYDROLASE#  
 L8 6 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'ESBIOBASE'  
 4898 LYSOSOMAL  
 4900 HYDROLASE#  
 L9 178 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'BIOTECHNO'  
 5825 LYSOSOMAL  
 6567 HYDROLASE#  
 L10 250 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

FILE 'WPIDS'  
 348 LYSOSOMAL  
 1845 HYDROLASE#  
 L11 9 LYSOSOMAL HYDROLASE#  
 (LYSOSOMAL (W) HYDROLASE#)

TOTAL FOR ALL FILES  
L12 5577 LYSOSOMAL HYDROLASE#

=> s l12 and mannose

FILE 'MEDLINE'  
16633 MANNOSE  
L13 92 L1 AND MANNOSE

FILE 'SCISEARCH'  
12311 MANNOSE  
L14 62 L2 AND MANNOSE

FILE 'LIFESCI'  
5538 MANNOSE  
L15 20 L3 AND MANNOSE

FILE 'BIOTECHDS'  
1594 MANNOSE  
L16 3 L4 AND MANNOSE

FILE 'BIOSIS'  
19310 MANNOSE  
L17 100 L5 AND MANNOSE

FILE 'EMBASE'  
12998 MANNOSE  
L18 78 L6 AND MANNOSE

FILE 'HCAPLUS'  
34625 MANNOSE  
L19 95 L7 AND MANNOSE

FILE 'NTIS'  
112 MANNOSE  
L20 0 L8 AND MANNOSE

FILE 'ESBIOBASE'  
4745 MANNOSE  
L21 35 L9 AND MANNOSE

FILE 'BIOTECHNO'  
7018 MANNOSE  
L22 46 L10 AND MANNOSE

FILE 'WPIDS'  
2350 MANNOSE  
L23 2 L11 AND MANNOSE

TOTAL FOR ALL FILES  
L24 533 L12 AND MANNOSE

=> s l24 and recombinant

FILE 'MEDLINE'  
212217 RECOMBINANT  
L25 14 L13 AND RECOMBINANT

FILE 'SCISEARCH'  
125730 RECOMBINANT  
L26 7 L14 AND RECOMBINANT

FILE 'LIFESCI'  
57598 RECOMBINANT  
L27 2 L15 AND RECOMBINANT

FILE 'BIOTECHDS'  
73723 RECOMBINANT  
L28 3 L16 AND RECOMBINANT

FILE 'BIOSIS'  
166116 RECOMBINANT  
L29 5 L17 AND RECOMBINANT

FILE 'EMBASE'  
137778 RECOMBINANT  
L30 3 L18 AND RECOMBINANT

FILE 'HCAPLUS'  
148453 RECOMBINANT  
L31 6 L19 AND RECOMBINANT

FILE 'NTIS'  
1472 RECOMBINANT  
L32 0 L20 AND RECOMBINANT

FILE 'ESBIOBASE'  
65245 RECOMBINANT  
L33 4 L21 AND RECOMBINANT

FILE 'BIOTECHNO'  
121219 RECOMBINANT  
L34 5 L22 AND RECOMBINANT

FILE 'WPIDS'  
30681 RECOMBINANT  
L35 2 L23 AND RECOMBINANT

TOTAL FOR ALL FILES  
L36 51 L24 AND RECOMBINANT

=> dup rem l36  
PROCESSING COMPLETED FOR L36  
L37 21 DUP REM L36 (30 DUPLICATES REMOVED)

=> d tot

L37 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2003 ACS on STN  
TI Soluble human acetylglucosamine-1-phosphotransferase containing an  
artificial proteolytic cleavage site to generate .alpha. and .beta.  
subunits  
SO U.S. Pat. Appl. Publ., 55 pp.  
CODEN: USXXCO  
IN Canfield, William; Kudo, Mariko  
AN 2003:492554 HCAPLUS  
DN 139:65404

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003119088	A1	20030626	US 2001-23888	20011221
	WO 2003057826	A2	20030717	WO 2002-US37624	20021220
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				



PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
MR, NE, SN, TD, TG

- L37 ANSWER 2 OF 21 MEDLINE on STN  
TI Phosphoregulation of sorting signal-VHS domain interactions by a direct electrostatic mechanism.  
SO NATURE STRUCTURAL BIOLOGY, (2002 Jul) 9 (7) 532-6.  
Journal code: 9421566. ISSN: 1072-8368.  
AU Kato Yukio; Misra Saurav; Puertollano Rosa; Hurley James H; Bonifacino Juan S  
AN 2002337810 MEDLINE
- L37 ANSWER 3 OF 21 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
TI Novel N-acetylglucosamine-1-phosphotransferase and N-acetylglucosamine-1-phosphodiester-alpha-N-acetylglucosaminidase, useful for producing phosphorylated **lysosomal hydrolase** for treating lysosomal storage diseases;  
vector-mediated gene transfer and expression in host cell, monoclonal antibody and hybridoma  
AU Canfield W M  
AN 2001-09921 BIOTECHDS  
PI WO 2001019955 22 Mar 2001
- L37 ANSWER 4 OF 21 MEDLINE on STN  
TI **Lysosomal hydrolase mannose** 6-phosphate uncovering enzyme resides in the trans-Golgi network.  
SO MOLECULAR BIOLOGY OF THE CELL, (2001 Jun) 12 (6) 1623-31.  
Journal code: 9201390. ISSN: 1059-1524.  
AU Rohrer J; Kornfeld R  
AN 2001345639 MEDLINE
- L37 ANSWER 5 OF 21 MEDLINE on STN  
TI Role of Rab9 GTPase in facilitating receptor recruitment by TIP47.  
SO SCIENCE, (2001 May 18) 292 (5520) 1373-6.  
Journal code: 0404511. ISSN: 0036-8075.  
AU Carroll K S; Hanna J; Simon I; Krise J; Barbero P; Pfeffer S R  
AN 2001268127 MEDLINE
- L37 ANSWER 6 OF 21 WPIDS COPYRIGHT 2003 THOMSON DERWENT on STN  
TI Identifying candidate drugs for Alzheimer's disease, from their ability to reduce endocytic activity or beta-amyloid deposition in cells or animals with increased endocytic activity.  
PI WO 2000067016 A1 20001109 (200067)\* EN 64p G01N033-00  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL  
OA PT SD SE SL SZ TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ  
EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK  
LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI  
SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
AU 2000046734 A 20001117 (200111) G01N033-00  
EP 1181550 A1 20020227 (200222) EN G01N033-00  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI  
JP 2002543425 W 20021217 (200312) 61p G01N033-50  
IN CATALDO, A M; MATHEWS, P M; NIXON, R A
- L37 ANSWER 7 OF 21 MEDLINE on STN  
TI Mammalian tumor susceptibility gene 101 (TSG101) and the yeast homologue, Vps23p, both function in late endosomal trafficking.  
SO TRAFFIC, (2000 Mar) 1 (3) 248-58.  
Journal code: 100939340. ISSN: 1398-9219.  
AU Babst M; Odorizzi G; Estepa E J; Emr S D  
AN 2001245022 MEDLINE

L37 ANSWER 8 OF 21 MEDLINE on STN DUPLICATE 2  
 TI Mobilization of late-endosomal cholesterol is inhibited by Rab guanine nucleotide dissociation inhibitor.  
 SO CURRENT BIOLOGY, (2000 Jan 27) 10 (2) 95-8.  
 Journal code: 9107782. ISSN: 0960-9822.  
 AU Holttä-Vuori M; Maatta J; Ullrich O; Kuusmanen E; Ikonen E  
 AN 2000130807 MEDLINE

L37 ANSWER 9 OF 21 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Selective perturbation of early endosome and/or trans-Golgi network pH but not lysosome pH by dose-dependent expression of influenza M2 protein  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (2 APR 1999) Vol. 274, No. 14, pp. 9854-9860.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.  
 ISSN: 0021-9258.  
 AU Henkel J R; Popovich J L; Gibson G A; Watkins S C; Weisz O A (Reprint)  
 AN 1999:271014 SCISEARCH

L37 ANSWER 10 OF 21 MEDLINE on STN DUPLICATE 3  
 TI Correction of enzymatic and lysosomal storage defects in Fabry mice by adenovirus-mediated gene transfer.  
 SO HUMAN GENE THERAPY, (1999 Jul 1) 10 (10) 1667-82.  
 Journal code: 9008950. ISSN: 1043-0342.  
 AU Ziegler R J; Yew N S; Li C; Cherry M; Berthelette P; Romanczuk H; Ioannou Y A; Zeidner K M; Desnick R J; Cheng S H  
 AN 1999355166 MEDLINE

L37 ANSWER 11 OF 21 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
 TI Retrovirus vector-mediated correction and cross-correction of lysosomal alpha-mannosidase deficiency in human and feline fibroblasts; retro virus vector-mediated human alpha-mannosidase in vitro expression in human and cat alpha-mannosidosis fibroblast, promising for the development of gene therapy of this disease  
 SO Hum. Gene Ther.; (1999) 10, 8, 1311-19  
 CODEN: HGTHE3 ISSN: 1043-0342  
 AU Sun H; Yang M; Haskins M E; Patterson D F; \*Wolfe J H  
 AN 1999-08229 BIOTECHDS

L37 ANSWER 12 OF 21 MEDLINE on STN DUPLICATE 4  
 TI Human alpha-galactosidase A: glycosylation site 3 is essential for enzyme solubility.  
 SO BIOCHEMICAL JOURNAL, (1998 Jun 15) 332 ( Pt 3) 789-97.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Ioannou Y A; Zeidner K M; Grace M E; Desnick R J  
 AN 1998285549 MEDLINE

L37 ANSWER 13 OF 21 MEDLINE on STN  
 TI Molecular basis of lysosomal enzyme recognition: three-dimensional structure of the cation-dependent **mannose** 6-phosphate receptor.  
 SO CELL, (1998 May 15) 93 (4) 639-48.  
 Journal code: 0413066. ISSN: 0092-8674.  
 AU Roberts D L; Weix D J; Dahms N M; Kim J J  
 AN 1998265974 MEDLINE

L37 ANSWER 14 OF 21 MEDLINE on STN  
 TI TIP47: a cargo selection device for **mannose** 6-phosphate receptor trafficking.  
 SO CELL, (1998 May 1) 93 (3) 433-43.  
 Journal code: 0413066. ISSN: 0092-8674.  
 AU Diaz E; Pfeffer S R  
 AN 1998250059 MEDLINE

L37 ANSWER 15 OF 21 MEDLINE on STN DUPLICATE 5

TI N-glycoprotein biosynthesis in plants: recent developments and future trends.  
 SO PLANT MOLECULAR BIOLOGY, (1998 Sep) 38 (1-2) 31-48. Ref: 101  
 Journal code: 9106343. ISSN: 0167-4412.  
 AU Lerouge P; Cabanes-Macheteau M; Rayon C; Fischette-Laine A C; Gomord V; Faye L  
 AN 1998409339 MEDLINE

L37 ANSWER 16 OF 21 MEDLINE on STN DUPLICATE 6  
 TI Carbohydrate structures of **recombinant** human alpha-L-iduronidase secreted by Chinese hamster ovary cells.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1997 Sep 5) 272 (36) 22758-65.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Zhao K W; Faull K F; Kakkis E D; Neufeld E F  
 AN 97426422 MEDLINE

L37 ANSWER 17 OF 21 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI The phosphorylation of bovine DNase I Asn-linked oligosaccharides is dependent on specific lysine and arginine residues  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1 AUG 1997) Vol. 272, No. 31, pp. 19408-19412.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.  
 ISSN: 0021-9258.  
 AU Nishikawa A; Gregory W; Frenz J; Cacia J; Kornfeld S (Reprint)  
 AN 97:591315 SCISEARCH

L37 ANSWER 18 OF 21 MEDLINE on STN  
 TI Several cooperating binding sites mediate the interaction of a lysosomal enzyme with phosphotransferase.  
 SO EMBO JOURNAL, (1997 Nov 17) 16 (22) 6684-93.  
 Journal code: 8208664. ISSN: 0261-4189.  
 AU Tikkanen R; Peltola M; Oinonen C; Rouvinen J; Peltonen L  
 AN 1998031896 MEDLINE

L37 ANSWER 19 OF 21 MEDLINE on STN DUPLICATE 7  
 TI Overexpression of the human lysosomal enzyme alpha-L-iduronidase in Chinese hamster ovary cells.  
 SO PROTEIN EXPRESSION AND PURIFICATION, (1994 Jun) 5 (3) 225-32.  
 Journal code: 9101496. ISSN: 1046-5928.  
 AU Kakkis E D; Matynia A; Jonas A J; Neufeld E F  
 AN 95037699 MEDLINE

L37 ANSWER 20 OF 21 MEDLINE on STN  
 TI Mouse procathepsin L lacking a functional glycosylation site is properly folded, stable, and secreted by NIH 3T3 cells.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1993 May 25) 268 (15) 11456-62.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Kane S E  
 AN 93266607 MEDLINE

L37 ANSWER 21 OF 21 LIFESCI COPYRIGHT 2003 CSA on STN  
 TI Using **recombinant** DNA techniques to study protein targeting in the eucaryotic cell.  
 ANNUAL REVIEW OF CELL BIOLOGY.  
 SO (1985) vol. 1, pp. 403-445.  
 ISBN: 0-8243-3101-X.  
 AU Garoff, H.; Palade, G.E. [editor]; Alberts, B.M. [editor]; Spudich, J.A. [editor]  
 AN 85:86706 LIFESCI

898624 2002-2003/PY  
L38 88 L13 NOT 2002-2003/PY

FILE 'SCISEARCH'  
1628347 2002-2003/PY  
L39 58 L14 NOT 2002-2003/PY

FILE 'LIFESCI'  
137782 2002-2003/PY  
L40 18 L15 NOT 2002-2003/PY

FILE 'BIOTECHDS'  
36013 2002-2003/PY  
L41 3 L16 NOT 2002-2003/PY

FILE 'BIOSIS'  
812724 2002-2003/PY  
L42 95 L17 NOT 2002-2003/PY

FILE 'EMBASE'  
739028 2002-2003/PY  
L43 74 L18 NOT 2002-2003/PY

FILE 'HCAPLUS'  
1765463 2002-2003/PY  
L44 89 L19 NOT 2002-2003/PY

FILE 'NTIS'  
17588 2002-2003/PY  
L45 0 L20 NOT 2002-2003/PY

FILE 'ESBIOBASE'  
467486 2002-2003/PY  
L46 31 L21 NOT 2002-2003/PY

FILE 'BIOTECHNO'  
203275 2002-2003/PY  
L47 44 L22 NOT 2002-2003/PY

FILE 'WPIDS'  
1736742 2002-2003/PY  
L48 0 L23 NOT 2002-2003/PY

TOTAL FOR ALL FILES  
L49 500 L24 NOT 2002-2003/PY

=> dup rem l49  
PROCESSING COMPLETED FOR L49  
L50 140 DUP REM L49 (360 DUPLICATES REMOVED)

=> d tot

L50 ANSWER 1 OF 140 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
TI Novel N-acetylglucosamine-1-phosphotransferase and N-acetylglucosamine-1-phosphodiester-alpha-N-acetylglucosaminidase, useful for producing phosphorylated **lysosomal hydrolase** for treating lysosomal storage diseases;  
vector-mediated gene transfer and expression in host cell, monoclonal antibody and hybridoma  
AU Canfield W M  
AN 2001-09921 BIOTECHDS  
PI WO 2001019955 22 Mar 2001

L50 ANSWER 2 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Sterol-modulated glycolipid sorting occurs in Niemann-Pick C1 late endosomes  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (2 FEB 2001) Vol. 276, No. 5, pp. 3417-3425.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814 USA.  
 ISSN: 0021-9258.  
 AU Zhang M; Dwyer N K; Neufeld E B; Love D C; Cooney A; Comly M; Patel S; Watari H; Strauss J F; Pentchev P G; Hanover J A; Blanchette-Mackie E J (Reprint)  
 AN 2001:144567 SCISEARCH

L50 ANSWER 3 OF 140 MEDLINE on STN DUPLICATE 1  
 TI **Lysosomal hydrolase mannose** 6-phosphate uncovering enzyme resides in the trans-Golgi network.  
 SO MOLECULAR BIOLOGY OF THE CELL, (2001 Jun) 12 (6) 1623-31.  
 Journal code: 9201390. ISSN: 1059-1524.  
 AU Rohrer J; Kornfeld R  
 AN 2001345639 MEDLINE

L50 ANSWER 4 OF 140 MEDLINE on STN DUPLICATE 2  
 TI Role of Rab9 GTPase in facilitating receptor recruitment by TIP47.  
 SO SCIENCE, (2001 May 18) 292 (5520) 1373-6.  
 Journal code: 0404511. ISSN: 0036-8075.  
 AU Carroll K S; Hanna J; Simon I; Krise J; Barbero P; Pfeffer S R  
 AN 2001268127 MEDLINE

L50 ANSWER 5 OF 140 MEDLINE on STN DUPLICATE 3  
 TI Histopathology, electrodiagnostic testing, and magnetic resonance imaging show significant peripheral and central nervous system myelin abnormalities in the cat model of alpha-mannosidosis.  
 SO JOURNAL OF NEUROPATHOLOGY AND EXPERIMENTAL NEUROLOGY, (2001 Aug) 60 (8) 817-28.  
 Journal code: 2985192R. ISSN: 0022-3069.  
 AU Vite C H; McGowan J C; Braund K G; Drobatz K J; Glickson J D; Wolfe J H; Haskins M E  
 AN 2001441376 MEDLINE

L50 ANSWER 6 OF 140 MEDLINE on STN DUPLICATE 4  
 TI Towards a human repertoire of monocytic lysosomal proteins.  
 SO ELECTROPHORESIS, (2000 Oct) 21 (16) 3411-9.  
 Journal code: 8204476. ISSN: 0173-0835.  
 AU Journet A; Chapel A; Kieffer S; Louwagie M; Luche S; Garin J  
 AN 2001135312 MEDLINE

L50 ANSWER 7 OF 140 MEDLINE on STN DUPLICATE 5  
 TI The lysosomal protease cathepsin D is efficiently sorted to and secreted from regulated secretory compartments in the rat basophilic/mast cell line RBL.  
 SO JOURNAL OF CELL SCIENCE, (2000 Sep) 113 ( Pt 18) 3289-98.  
 Journal code: 0052457. ISSN: 0021-9533.  
 AU Dragonetti A; Baldassarre M; Castino R; Demoz M; Luini A; Buccione R; Isidoro C  
 AN 2001038308 MEDLINE

L50 ANSWER 8 OF 140 MEDLINE on STN DUPLICATE 6  
 TI Mammalian tumor susceptibility gene 101 (TSG101) and the yeast homologue, Vps23p, both function in late endosomal trafficking.  
 SO TRAFFIC, (2000 Mar) 1 (3) 248-58.  
 Journal code: 100939340. ISSN: 1398-9219.  
 AU Babst M; Odorizzi G; Estepa E J; Emr S D  
 AN 2001245022 MEDLINE

L50 ANSWER 9 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 7

TI Rab7, a multifaceted GTP-binding protein regulating access to degradative compartments in eukaryotic cells  
 SO PROTOPLASMA, (MAY 2000) Vol. 210, No. 3-4, pp. 108-116.  
 Publisher: SPRINGER-VERLAG WIEN, SACHSENPLATZ 4-6, PO BOX 89, A-1201 VIENNA, AUSTRIA.  
 ISSN: 0033-183X.  
 AU Bruckert F (Reprint); Laurent O; Satre M  
 AN 2000:201331 SCISEARCH

L50 ANSWER 10 OF 140 MEDLINE on STN DUPLICATE 8  
 TI Mobilization of late-endosomal cholesterol is inhibited by Rab guanine nucleotide dissociation inhibitor.  
 SO CURRENT BIOLOGY, (2000 Jan 27) 10 (2) 95-8.  
 Journal code: 9107782. ISSN: 0960-9822.  
 AU Holtta-Vuori M; Maatta J; Ullrich O; Kuusmanen E; Ikonen E  
 AN 2000130807 MEDLINE

L50 ANSWER 11 OF 140 MEDLINE on STN DUPLICATE 9  
 TI Lectins and traffic in the secretory pathway.  
 SO FEBS LETTERS, (2000 Jun 30) 476 (1-2) 32-7. Ref: 67  
 Journal code: 0155157. ISSN: 0014-5793.  
 AU Hauri H; Appenzeller C; Kuhn F; Nufer O  
 AN 2000341208 MEDLINE

L50 ANSWER 12 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Accumulation of sialic acid in endocytic compartments interferes with the formation of mature lysosomes - Impaired proteolytic processing of cathepsin B in fibroblasts of patients with lysosomal sialic acid storage disease  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (2 JUL 1999) Vol. 274, No. 27, pp. 19063-19071.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.  
 ISSN: 0021-9258.  
 AU Schmid J A; Mach L; Paschke E; Glossl J (Reprint)  
 AN 1999:524469 SCISEARCH

L50 ANSWER 13 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Selective perturbation of early endosome and/or trans-Golgi network pH but not lysosome pH by dose-dependent expression of influenza M2 protein  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (2 APR 1999) Vol. 274, No. 14, pp. 9854-9860.  
 Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.  
 ISSN: 0021-9258.  
 AU Henkel J R; Popovich J L; Gibson G A; Watkins S C; Weisz O A (Reprint)  
 AN 1999:271014 SCISEARCH

L50 ANSWER 14 OF 140 MEDLINE on STN DUPLICATE 10  
 TI Correction of enzymatic and lysosomal storage defects in Fabry mice by adenovirus-mediated gene transfer.  
 SO HUMAN GENE THERAPY, (1999 Jul 1) 10 (10) 1667-82.  
 Journal code: 9008950. ISSN: 1043-0342.  
 AU Ziegler R J; Yew N S; Li C; Cherry M; Berthelette P; Romanczuk H; Ioannou Y A; Zeidner K M; Desnick R J; Cheng S H  
 AN 1999355166 MEDLINE

L50 ANSWER 15 OF 140 MEDLINE on STN DUPLICATE 11  
 TI Retrovirus vector-mediated correction and cross-correction of lysosomal alpha-mannosidase deficiency in human and feline fibroblasts.  
 SO HUMAN GENE THERAPY, (1999 May 20) 10 (8) 1311-9.  
 Journal code: 9008950. ISSN: 1043-0342.  
 AU Sun H; Yang M; Haskins M E; Patterson D F; Wolfe J H  
 AN 1999291784 MEDLINE

L50 ANSWER 16 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI Alteration in pancreatic immunoreactivity of insulin-like growth factor  
 (IGF)-binding protein (IGFBP)-6 and in intracellular degradation of  
 IGFBP-3 in fibroblasts of IGF-II receptor/IGF-II-deficient mice  
 SO HORMONE AND METABOLIC RESEARCH, (FEB-MAR 1999) Vol. 31, No. 2-3, pp.  
 235-241.  
 Publisher: GEORG THIEME VERLAG, P O BOX 30 11 20, D-70451 STUTTGART,  
 GERMANY.  
 ISSN: 0018-5043.  
 AU Braulke T (Reprint); Dittmer F; Gotz W; vonFigura K  
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L50 ANSWER 17 OF 140 MEDLINE on STN DUPLICATE 12  
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Journal code: 7605701. ISSN: 0361-7742.

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L50 ANSWER 134 OF 140 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS  
RESERVED. on STN  
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L50 ANSWER 135 OF 140 MEDLINE on STN DUPLICATE 94  
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II and mucopolipidosis III.  
SO MOLECULAR AND CELLULAR BIOCHEMISTRY, (1978 Oct 13) 21 (1) 17-21.  
Journal code: 0364456. ISSN: 0300-8177.

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AN 79093680 MEDLINE

L50 ANSWER 136 OF 140 MEDLINE on STN DUPLICATE 95  
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pinocytosis receptors on human fibroblasts.  
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AN 77193975 MEDLINE

L50 ANSWER 137 OF 140 HCAPLUS COPYRIGHT 2003 ACS on STN  
TI Interaction between lysosomal glycosidases from human plasma and lectins  
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CODEN: PBFPA6; ISSN: 0079-7065

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AN 1976:518763 HCAPLUS  
DN 85:118763

L50 ANSWER 138 OF 140 MEDLINE on STN DUPLICATE 96  
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SO JOURNAL OF CELLULAR PHYSIOLOGY, (1975 Aug) 86 (1) 131-42.  
Journal code: 0050222. ISSN: 0021-9541.

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L50 ANSWER 139 OF 140 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 97  
TI EFFECTS OF CONCAVALIN A ON MOUSE PERITONEAL MACROPHAGES PART 2  
METABOLISM OF ENDOCYTIZED PROTEINS AND REVERSIBILITY OF THE EFFECTS BY  
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SO J EXP MED, (1974) 140 (5), 1387-1403.  
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L50 ANSWER 140 OF 140 HCAPLUS COPYRIGHT 2003 ACS on STN

TI **Lysosomal hydrolases** as glycoproteins  
SO Life Sciences (1970), 9(23)(Pt. 2), 1341-50  
CODEN: LIFSAK; ISSN: 0024-3205  
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AN 1971:72048 HCAPLUS  
DN 74:72048

=> d ab 6,11,22,31,45,50,56,71,82,103,108,111,123

L50 ANSWER 6 OF 140 MEDLINE on STN DUPLICATE 4  
AB The lysosomal compartment of human monocytic cells has never been investigated by a proteomic approach. By a combination of one-dimensional (1-D) and two-dimensional (2-D) gel electrophoresis, protein identification by N-terminal sequencing, matrix assisted laser desorption/ionization-mass spectrometry (MALDI-MS) peptide mass fingerprinting and tandem mass spectrometry (MS/MS) peptide sequence analysis, we initiated an exhaustive study of the human lysosomal proteome, which aims at establishing a 2-D reference map of human soluble lysosomal proteins. Human monocytic U937 cells were induced to secrete lysosomal soluble hydrolases by addition of NH<sub>4</sub>Cl in the culture medium. Since lysosomal soluble proteins are characterized by the presence of **mannose**-6-phosphate, they were purified on an affinity support bearing **mannose**-6-phosphate receptor. Analysis of the purified fraction led to the preliminary identification of fifteen proteins, among which twelve are well-known **lysosomal hydrolases**, one is assumed to be lysosomal on the basis of sequence homology to cysteine proteinases of the papain family, and two (leukocystatin and the human cellular repressor of E1A-stimulated genes) are described here for the first time as **mannose**-6-phosphate-containing proteins.

L50 ANSWER 11 OF 140 MEDLINE on STN DUPLICATE 9  
AB Evidence is accumulating that intracellular animal lectins play important roles in quality control and glycoprotein sorting along the secretory pathway. Calnexin and calreticulin in conjunction with associated chaperones promote correct folding and oligomerization of many glycoproteins in the endoplasmic reticulum (ER). The **mannose** lectin ERGIC-53 operates as a cargo receptor in transport of glycoproteins from ER to Golgi and the homologous lectin VIP36 may operate in quality control of glycosylation in the Golgi. Exit from the Golgi of **lysosomal hydrolases** to endosomes requires **mannose** 6-phosphate receptors and exit to the apical plasma membrane may also involve traffic lectins. Here we discuss the features of these lectins and their role in glycoprotein traffic in the secretory pathway.

L50 ANSWER 22 OF 140 MEDLINE on STN DUPLICATE 16  
AB Targeting of newly synthesized **lysosomal hydrolases** to the lysosome is mediated by the cation-dependent **mannose** 6-phosphate receptor (CD-MPR) and the insulin-like growth factor II/cation-independent **mannose** 6-phosphate receptor (IGF-II/CI-MPR). The two receptors, which share sequence similarities, constitute the P-type family of animal lectins. We now report the three-dimensional structure of a glycosylation-deficient, yet fully functional form of the extracytoplasmic domain of the bovine CD-MPR (residues 3-154) complexed with **mannose** 6-phosphate at 1.8 Å resolution. The extracytoplasmic domain of the CD-MPR crystallizes as a dimer, and each monomer folds into a nine-stranded flattened beta barrel, which bears a striking resemblance to avidin. The distance of 40 Å between the two ligand-binding sites of the dimer provides a structural basis for the observed differences in binding affinity exhibited by the CD-MPR toward various lysosomal enzymes.

L50 ANSWER 31 OF 140 MEDLINE on STN DUPLICATE 24



AB In cells specialized for secretory granule exocytosis, **lysosomal hydrolases** may enter the regulated secretory pathway. Using mouse pancreatic islets and the INS-1 beta-cell line as models, we have compared the itineraries of procathepsins L and B, two closely related members of the papain superfamily known to exhibit low and high affinity for **mannose-6-phosphate** receptors (MPRs), respectively. Interestingly, shortly after pulse labeling INS cells, a substantial fraction of both proenzymes exhibit regulated exocytosis. After several hours, much procathepsin L remains as precursor in a compartment that persists in its ability to undergo regulated exocytosis in parallel with insulin, while procathepsin B is efficiently converted to the mature form and can no longer be secreted. However, in islets from transgenic mice devoid of cation-dependent MPRs, the modest fraction of procathepsin B normally remaining within mature secretory granules is increased approximately fourfold. In normal mouse islets, immunoelectron microscopy established that both cathepsins are present in immature beta-granules, while immunolabeling for cathepsin L, but not B, persists in mature beta-granules. By contrast, in islets from normal male Sprague-Dawley rats, much of the proenzyme sorting appears to occur earlier, significantly diminishing the stimulus-dependent release of procathepsin B. Evidently, in the context of different systems, MPR-mediated sorting of lysosomal proenzymes occurs to a variable extent within the trans-Golgi network and is continued, as needed, within immature secretory granules. Lysosomal proenzymes that fail to be sorted at both sites remain as residents of mature secretory granules.

L50 ANSWER 45 OF 140 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 34

AB Two related transmembrane proteins in mammalian cells bind the **mannose 6-phosphate** recognition marker present on all soluble **lysosomal hydrolases**. Recent studies of cells that express only one or neither of these proteins have shed light not only on their function in directing lysosomal enzymes into the endocytic pathway but also on their critical role in transport vesicle formation in the trans Golgi network. One of these proteins also binds insulin-like growth factor II (IGF-II) and may be an important part of the IGF-dependent system that regulates development.

L50 ANSWER 50 OF 140 HCAPLUS COPYRIGHT 2003 ACS on STN

AB A review and discussion with 69 refs. A no. of lysosomal glycoproteins exist which are membrane-assocd. and do not contain the **mannose 6-phosphate** lysosomal targeting signal which sorts sol. **lysosomal hydrolases** to the lysosome in the Golgi app. These include lysosomal acid phosphatase (LAP), which is targeted as a transmembrane protein to the lysosome where it is cleaved to release the sol. enzyme, and a no. of lysosomal membrane-assocd. glycoproteins including the homologous families of LAMP-1 and LAMP-2 as well as other smaller-mol.-wt. glycoproteins including LIMP II and CD63. The cytoplasmic domain of LAP, LAMP-1, and LIMP II is capable of targeting the ectodomain of nonlysosomal glycoproteins to the lysosome. Except for LIMP II, the lysosomal membrane glycoproteins contain a Gly-Tyr-X-X-hydrophobic amino acid lysosomal targeting motif in their cytoplasmic domains. Studies of LAP, LAMP-1, and LAMP-2 have generated conflicting data as to the biosynthetic targeting pathway of these proteins and, in particular, as to whether it includes the plasma membrane.

L50 ANSWER 56 OF 140 MEDLINE on STN DUPLICATE 42

AB Lysosomal enzymes contain a common protein determinant that is recognized by UDP-GlcNAc:lysosomal enzyme N-acetylglucosamine-1-phosphotransferase, the initial enzyme in the biosynthesis of **mannose-6-P** residues. Previously, we generated a lysosomal enzyme recognition domain by substituting two regions (lysine 203 and amino acids 265-292) of the **lysosomal hydrolase** cathepsin D into a related secretory protein glycopepsinogen. When expressed in *Xenopus* oocytes, the

oligosaccharides of the chimeric protein were efficiently phosphorylated (Baranski, T. J., Faust, P. L., and Kornfeld, S. (1990) Cell 63, 281-291). In the current study, incremental substitutions of cathepsin D residues into glycopepsinogen and alanine-scanning mutagenesis were utilized to define the recognition domain more precisely. A computer-generated model of the cathepsin D/pepsinogen chimeric molecule served as a guide for mutagenesis and for the interpretation of results. These studies indicate that the recognition domain is a surface patch that contains multiple interacting sites. There is a strict positional requirement for the lysine residue at position 203.

L50 ANSWER 71 OF 140 MEDLINE on STN DUPLICATE 52

AB The nature and function of oligosaccharide modification in glucocerebrosidase, a membrane-associated **lysosomal hydrolase**, have been investigated in cultured human skin fibroblasts. Glucocerebrosidase is synthesised as a 62.5-kDa precursor with high-**mannose**-type oligosaccharide chains and an apparent native isoelectric point of 6.0-7.0. Subsequent processing of the oligosaccharide moieties to sialylated complex-type structures results in formation of 65-68-kDa forms of the enzyme with apparent native isoelectric points of 4.3-5.0. These forms are transported to lysosomes and subsequently modified by the sequential action of lysosomal exoglycosidases, finally resulting in a 59-kDa form with an isoelectric point near neutrality. The existence of oligosaccharide modification of the enzyme in the lysosomes is illustrated by the accumulation of different intermediate forms of glucocerebrosidase in mutant cell lines deficient in lysosomal exoglycosidases. The enzyme does not undergo proteolytic modification during maturation. The possible physiological relevance of the oligosaccharide modification of glucocerebrosidase in the lysosomes was investigated by studying the properties of the enzyme in fibroblasts deficient in lysosomal exoglycosidases, and also the properties of homogeneous pure glucocerebrosidase from placenta, modified in the oligosaccharide moieties by digestion in vitro with glycosidases. Modification of the oligosaccharide moieties of glucocerebrosidase had no significant effect on the catalytic activity of the enzyme as measured with either artificial or natural substrates in the presence of artificial or natural activators. There was also no effect of modification of the oligosaccharide chains on the intracellular stability of the enzyme or on its apparent hydrophobicity. We conclude that oligosaccharide modification of glucocerebrosidase in the lysosomes simply reflects further maturation of the enzyme in the lysosome and is of no importance to its function.

L50 ANSWER 82 OF 140 HCAPLUS COPYRIGHT 2003 ACS on STN

AB The biosynthesis of the **mannose** 6-phosphate recognition marker was studied in transport-impaired mouse lymphoma cells to det. the subcellular location of the processing enzymes and to characterize the biosynthetic intermediates. Cells were labeled with [2-3H]**mannose** and chased at a low temp. (15 or 20.degree.) or at 37.degree. in the presence of CCCP to disrupt transport of the pulse-labeled mols. within the secretory app. Both treatments inhibited the migration of the pulse-labeled glycoproteins to the Golgi app., as measured by the prodn. of complex-type asparagine-linked oligosaccharides. Despite this inhibition in protein transport, acid hydrolases were phosphorylated. Structural anal. of the phosphorylated oligosaccharides indicated that the transport-impaired cells produced a single species of phosphorylated high-**mannose** oligosaccharide; essentially all of the mols. contain a single phosphodiester group that is restricted to the .alpha.-1,6 branch of the oligosaccharide. Apparently, synthesis of **mannose** 6-phosphate-bearing high-**mannose** oligosaccharides occurs in an ordered, compartmentalized posttranslational process. The initial phosphorylation of newly synthesized acid hydrolases occurs at a pre-Golgi site and results in the prodn. of high-**mannose**-type units that contain a single phosphodiester group. In a subsequent compartment,

probably within the Golgi app., the monophosphorylated units may be converted to diphosphorylated forms. Finally, at a site distal to the phosphorylation reactions the diesters are hydrolyzed to reveal the **mannose 6-phosphate** recognition marker.

- L50 ANSWER 103 OF 140 MEDLINE on STN DUPLICATE 74  
AB Glycoproteins terminating in **mannose** are recognized by receptors on macrophages. The **mannose** receptor is expressed by a variety of macrophages but expression is closely regulated. Activated macrophages, for example, express little **mannose** receptor activity. Kinetic and fractionation experiments suggest that cell surface **mannose** receptors recycle to and from an acidic, pre-lysosomal compartment. Preliminary evidence suggests that the **mannose** receptor is a large polypeptide and that it is structurally related to the **mannose** binding protein found in serum. The **mannose** receptor may, among other possibilities, regulate the extracellular levels of **lysosomal hydrolases**.
- L50 ANSWER 108 OF 140 MEDLINE on STN  
AB Glycoproteins carrying asparagine-linked N-glycosyl oligosaccharides have many diverse biological functions. The role of the carbohydrate in these functions is often obscure. However, there is evidence that carbohydrate is involved in stabilization of glycoproteins during passage from the rough endoplasmic reticulum to the cell surface, and in recognition phenomena such as receptor-mediated endocytosis, routing of **lysosomal hydrolases** to the lysosomes, and the spread of cancer cells to secondary sites. The cell surface carbohydrate of some transformed cell lines tends to be more highly branched than that of the non-transformed controls. The control of branching during synthesis of N-glycosyl oligosaccharides resides in the N-acetylglucosaminyltransferases (GlcNAc-transferases) which initiate these branches. There must be at least seven such GlcNAc-transferases to account for the diversity of structures that have been observed. Our laboratory has developed assays for four of these enzymes. Substrate specificity studies on these enzymes have shed light on some of the control mechanisms involved in the synthesis of highly branched structures. Alterations in these control mechanisms may be important in the pathogenesis of cancer and other disease.
- L50 ANSWER 111 OF 140 MEDLINE on STN DUPLICATE 79  
AB The intracellular transport of newly synthesized **lysosomal hydrolases** to lysosomes requires the presence of one or more phosphorylated high **mannose**-type oligosaccharides per enzyme. A receptor that mediates **mannose**-6-PO<sub>4</sub>-specific uptake of lysosomal enzymes is expressed on the surface of fibroblasts and presumably accounts for the intracellular transport of newly synthesized enzymes to the lysosome. In this study, we examined the internalization of lysosomal enzyme-derived phosphorylated oligosaccharides by cultured human fibroblasts. Oligosaccharides of known specific activity bearing a single phosphate in monoester linkage were internalized with Kuptake of  $3.2 \times 10^{-7}$  M, whereas oligosaccharides bearing two phosphates in monoester linkage were internalized with a Kuptake of  $3.9 \times 10^{-8}$  M. Thus, phosphorylated high **mannose**-type oligosaccharides appear to be the minimal structure required for recognition and uptake by the fibroblast receptor. The finding that the Kuptake for monophosphorylated oligosaccharides is 100-fold less than the reported  $K_i$  for **mannose** -6-phosphate indicates that the fibroblast phosphomannosyl receptor contains a binding site that recognizes features of the oligosaccharide in addition to **mannose**-6-phosphate.
- L50 ANSWER 123 OF 140 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 86  
AB Most of the soluble hydrolase activity of broken lysosomes is bound to lysosomal membranes. This soluble activity could be released from the

membranes by the addition of sugar phosphates. **Mannose** -6-phosphate displaces N-acetyl-.beta.-D-glucosaminidase (NA.beta.Gase) from the membrane in a concentration dependent manner; fructose-6-phosphate and AMP were also effective. The binding of .beta.-glucuronidase was similarly affected by sugar phosphates. The glycosyl specificity of the lysosomal membrane receptor appears to be similar to that of the plasma membrane receptor in cultured fibroblasts, as previously reported. Phosphomannosyl receptors for the **lysosomal hydrolases** may exist in the lysosomal membrane and in the plasma membrane.

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FILE 'MEDLINE'
      38027 LYSOSOM?
      241837 TARGET?
L1      691 LYSOSOM? (5A) TARGET?

FILE 'SCISEARCH'
      21942 LYSOSOM?
      279786 TARGET?
L2      645 LYSOSOM? (5A) TARGET?

FILE 'LIFESCI'
      6942 LYSOSOM?
      92599 TARGET?
L3      260 LYSOSOM? (5A) TARGET?

FILE 'BIOTECHDS'
      422 LYSOSOM?
      20191 TARGET?
L4      38 LYSOSOM? (5A) TARGET?

FILE 'BIOSIS'
      37524 LYSOSOM?
      238101 TARGET?
L5      768 LYSOSOM? (5A) TARGET?

FILE 'EMBASE'
      29348 LYSOSOM?
      233519 TARGET?
L6      642 LYSOSOM? (5A) TARGET?

FILE 'HCAPLUS'
      32919 LYSOSOM?
      343801 TARGET?
L7      839 LYSOSOM? (5A) TARGET?

FILE 'NTIS'
      279 LYSOSOM?
      61418 TARGET?
L8      9 LYSOSOM? (5A) TARGET?

FILE 'ESBIOBASE'
      7785 LYSOSOM?
      139159 TARGET?
L9      398 LYSOSOM? (5A) TARGET?

FILE 'BIOTECHNO'
      8463 LYSOSOM?
      106140 TARGET?
L10     411 LYSOSOM? (5A) TARGET?

FILE 'WPIDS'
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521 LYSOSOM?  
123269 TARGET?  
L11 26 LYSOSOM? (5A) TARGET?

TOTAL FOR ALL FILES  
L12 4727 LYSOSOM? (5A) TARGET?

=> s l12 and lectin#  
FILE 'MEDLINE'

34944 LECTIN#  
L13 13 L1 AND LECTIN#

FILE 'SCISEARCH'  
25083 LECTIN#  
L14 12 L2 AND LECTIN#

FILE 'LIFESCI'  
8672 LECTIN#  
L15 2 L3 AND LECTIN#

FILE 'BIOTECHDS'  
1041 LECTIN#  
L16 1 L4 AND LECTIN#

FILE 'BIOSIS'  
31692 LECTIN#  
L17 9 L5 AND LECTIN#

FILE 'EMBASE'  
22213 LECTIN#  
L18 10 L6 AND LECTIN#

FILE 'HCAPLUS'  
34733 LECTIN#  
L19 17 L7 AND LECTIN#

FILE 'NTIS'  
139 LECTIN#  
L20 0 L8 AND LECTIN#

FILE 'ESBIOBASE'  
7690 LECTIN#  
L21 7 L9 AND LECTIN#

FILE 'BIOTECHNO'  
9570 LECTIN#  
L22 9 L10 AND LECTIN#

FILE 'WPIDS'  
1811 LECTIN#  
L23 1 L11 AND LECTIN#

TOTAL FOR ALL FILES  
L24 81 L12 AND LECTIN#

=> s l12 and (mannose or m6p)  
FILE 'MEDLINE'  
16633 MANNOSE  
183 M6P  
L25 197 L1 AND (MANNOSE OR M6P)

FILE 'SCISEARCH'  
12311 MANNOSE  
203 M6P

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L26          164 L2 AND (MANNOSE OR M6P)

FILE 'LIFESCI'
      5538 MANNOSE
      60 M6P
L27          70 L3 AND (MANNOSE OR M6P)

FILE 'BIOTECHDS'
      1594 MANNOSE
      4 M6P
L28          4 L4 AND (MANNOSE OR M6P)

FILE 'BIOSIS'
      19310 MANNOSE
      235 M6P
L29          200 L5 AND (MANNOSE OR M6P)

FILE 'EMBASE'
      12998 MANNOSE
      171 M6P
L30          168 L6 AND (MANNOSE OR M6P)

FILE 'HCAPLUS'
      34625 MANNOSE
      220 M6P
L31          222 L7 AND (MANNOSE OR M6P)

FILE 'NTIS'
      112 MANNOSE
      8 M6P
L32          0 L8 AND (MANNOSE OR M6P)

FILE 'ESBIOBASE'
      4745 MANNOSE
      120 M6P
L33          89 L9 AND (MANNOSE OR M6P)

FILE 'BIOTECHNO'
      7018 MANNOSE
      109 M6P
L34          117 L10 AND (MANNOSE OR M6P)

FILE 'WPIDS'
      2350 MANNOSE
      11 M6P
L35          5 L11 AND (MANNOSE OR M6P)

TOTAL FOR ALL FILES
L36          1236 L12 AND (MANNOSE OR M6P)

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FILE 'MEDLINE'
      214944 RECOMBINANT#
L37          95 L25 AND (RECOMBINANT# OR GENE/Q)

FILE 'SCISEARCH'
      128023 RECOMBINANT#
L38          68 L26 AND (RECOMBINANT# OR GENE/Q)

FILE 'LIFESCI'
      60044 RECOMBINANT#
L39          20 L27 AND (RECOMBINANT# OR GENE/Q)

FILE 'BIOTECHDS'

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      74311 RECOMBINANT#
L40      3 L28 AND (RECOMBINANT# OR GENE/Q)

FILE 'BIOSIS'
      169859 RECOMBINANT#
L41      52 L29 AND (RECOMBINANT# OR GENE/Q)

FILE 'EMBASE'
      139970 RECOMBINANT#
L42      65 L30 AND (RECOMBINANT# OR GENE/Q)

FILE 'HCAPLUS'
      151835 RECOMBINANT#
L43      66 L31 AND (RECOMBINANT# OR GENE/Q)

FILE 'NTIS'
      1511 RECOMBINANT#
L44      0 L32 AND (RECOMBINANT# OR GENE/Q)

FILE 'ESBIOBASE'
      66211 RECOMBINANT#
L45      34 L33 AND (RECOMBINANT# OR GENE/Q)

FILE 'BIOTECHNO'
      123034 RECOMBINANT#
L46      57 L34 AND (RECOMBINANT# OR GENE/Q)

FILE 'WPIDS'
      30764 RECOMBINANT#
L47      5 L35 AND (RECOMBINANT# OR GENE/Q)

TOTAL FOR ALL FILES
L48      465 L36 AND (RECOMBINANT# OR GENE/Q)

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FILE 'MEDLINE'
      898624 2002-2003/PY
L49      92 (L13 OR L37) NOT 2002-2003/PY

FILE 'SCISEARCH'
      1628347 2002-2003/PY
L50      66 (L14 OR L38) NOT 2002-2003/PY

FILE 'LIFESCI'
      137782 2002-2003/PY
L51      20 (L15 OR L39) NOT 2002-2003/PY

FILE 'BIOTECHDS'
      36013 2002-2003/PY
L52      1 (L16 OR L40) NOT 2002-2003/PY

FILE 'BIOSIS'
      812724 2002-2003/PY
L53      49 (L17 OR L41) NOT 2002-2003/PY

FILE 'EMBASE'
      739028 2002-2003/PY
L54      65 (L18 OR L42) NOT 2002-2003/PY

FILE 'HCAPLUS'
      1765463 2002-2003/PY
L55      58 (L19 OR L43) NOT 2002-2003/PY

FILE 'NTIS'

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17588 2002-2003/PY  
L56 0 (L20 OR L44) NOT 2002-2003/PY

FILE 'ESBIOBASE'  
467486 2002-2003/PY  
L57 30 (L21 OR L45) NOT 2002-2003/PY

FILE 'BIOTECHNO'  
203275 2002-2003/PY  
L58 55 (L22 OR L46) NOT 2002-2003/PY

FILE 'WPIDS'  
1736742 2002-2003/PY  
L59 0 (L23 OR L47) NOT 2002-2003/PY

TOTAL FOR ALL FILES  
L60 436 (L24 OR L48) NOT 2002-2003/PY

=> dup rem l60  
PROCESSING COMPLETED FOR L60  
L61 141 DUP REM L60 (295 DUPLICATES REMOVED)

=> d tot

L61 ANSWER 1 OF 141 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
TI Biodistribution, kinetics, and efficacy of highly phosphorylated and  
non-phosphorylated beta-glucuronidase in the murine model of  
mucopolysaccharidosis VII  
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (16 NOV 2001) Vol. 276, No. 46, pp.  
43160-43165.  
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE  
PIKE, BETHESDA, MD 20814 USA.  
ISSN: 0021-9258.  
AU Sands M S (Reprint); Vogler C A; Ohlemiller K K; Roberts M S; Grubb J H;  
Levy B; Sly W S  
AN 2001:919950 SCISEARCH

L61 ANSWER 2 OF 141 MEDLINE on STN DUPLICATE 1  
TI Human acid ceramidase: processing, glycosylation, and **lysosomal**  
**targeting**.  
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Journal code: 2985121R. ISSN: 0021-9258.  
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F; Schuchman E H; Sandhoff K  
AN 2001527195 MEDLINE

L61 ANSWER 3 OF 141 MEDLINE on STN  
TI Binding of GGA2 to the lysosomal enzyme sorting motif of the  
**mannose** 6-phosphate receptor.  
SO SCIENCE, (2001 Jun 1) 292 (5522) 1716-8.  
Journal code: 0404511. ISSN: 0036-8075.  
AU Zhu Y; Doray B; Poussu A; Lehto V P; Kornfeld S  
AN 2001314374 MEDLINE

L61 ANSWER 4 OF 141 MEDLINE on STN DUPLICATE 2  
TI Enzyme therapy for lysosomal acid lipase deficiency in the mouse.  
SO HUMAN MOLECULAR GENETICS, (2001 Aug 1) 10 (16) 1639-48.  
Journal code: 9208958. ISSN: 0964-6906.  
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AN 2001441564 MEDLINE

L61 ANSWER 5 OF 141 MEDLINE on STN DUPLICATE 3  
TI Adenovirus serotype 7 retention in a late endosomal compartment prior to  
cytosol escape is modulated by fiber protein.



SO JOURNAL OF VIROLOGY, (2001 Feb) 75 (3) 1387-400.  
Journal code: 0113724. ISSN: 0022-538X.

AU Miyazawa N; Crystal R G; Leopold P L  
AN 2001111656 MEDLINE

L61 ANSWER 6 OF 141 MEDLINE on STN DUPLICATE 4  
TI Overexpression of a rat kinase-deficient phosphoinositide 3-kinase, Vps34p, inhibits cathepsin D maturation.

SO BIOCHEMICAL JOURNAL, (2001 Feb 1) 353 (Pt 3) 655-61.  
Journal code: 2984726R. ISSN: 0264-6021.

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AN 2001194977 MEDLINE

L61 ANSWER 7 OF 141 MEDLINE on STN  
TI Mutations of the C-terminal end of cathepsin K affect proenzyme secretion and intracellular maturation.

SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2001 Feb 23) 281 (2) 551-7.  
Journal code: 0372516. ISSN: 0006-291X.

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AN 2001182379 MEDLINE

L61 ANSWER 8 OF 141 MEDLINE on STN DUPLICATE 5  
TI **Mannose** 6-phosphate-independent endocytosis of beta-glucuronidase by human fibroblasts. I. Evidence for the existence of a membrane-binding activity.

SO BIOCHIMICA ET BIOPHYSICA ACTA, (2001 Apr 23) 1538 (2-3) 141-51.  
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AN 2001341378 MEDLINE

L61 ANSWER 9 OF 141 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
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L61 ANSWER 90 OF 141 LIFESCI COPYRIGHT 2003 CSA on STN  
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L61 ANSWER 114 OF 141 MEDLINE on STN DUPLICATE 69  
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L61 ANSWER 121 OF 141 HCAPLUS COPYRIGHT 2003 ACS on STN

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L61 ANSWER 123 OF 141 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS  
RESERVED. on STN

TI Lysosomal integral membrane glycoproteins are expressed at high levels in  
the inclusion bodies of I-cell disease fibroblasts.

SO Archives of Biochemistry and Biophysics, (1989) 271/1 (157-167).  
ISSN: 0003-9861 CODEN: ABBIA4

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L61 ANSWER 124 OF 141 MEDLINE on STN

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Journal code: 8205768. ISSN: 0730-2312.

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L61 ANSWER 125 OF 141 MEDLINE on STN DUPLICATE 77

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Journal code: 2985121R. ISSN: 0021-9258.

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L61 ANSWER 126 OF 141 MEDLINE on STN DUPLICATE 78

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L61 ANSWER 127 OF 141 HCAPLUS COPYRIGHT 2003 ACS on STN

TI Proliferin secreted by cultured cells binds to **mannose**

6-phosphate receptors  
SO Journal of Biological Chemistry (1988), 263(7), 3521-7  
CODEN: JBCHA3; ISSN: 0021-9258  
AU Lee, Se Jin; Nathans, Daniel  
AN 1988:147903 HCAPLUS  
DN 108:147903

L61 ANSWER 128 OF 141 MEDLINE on STN DUPLICATE 79  
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Cloning and **sequence** of the full-length cDNA and expression of  
functional receptor in COS cells.  
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L61 ANSWER 129 OF 141 MEDLINE on STN  
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L61 ANSWER 131 OF 141 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
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AN 1988:89989 BIOSIS

L61 ANSWER 132 OF 141 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS  
RESERVED. on STN DUPLICATE 80  
TI Expression of human cathepsin D in Xenopus oocytes: Phosphorylation and  
intracellular targetting.  
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ISSN: 0021-9525 CODEN: JCLBA3  
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L61 ANSWER 133 OF 141 MEDLINE on STN DUPLICATE 81  
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Journal code: 8804484. ISSN: 0892-6638.  
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L61 ANSWER 134 OF 141 MEDLINE on STN DUPLICATE 82  
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Miller A L  
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L61 ANSWER 135 OF 141 MEDLINE on STN DUPLICATE 83  
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 Journal code: 0212271. ISSN: 0076-6879.  
 AU Murray G J  
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L61 ANSWER 136 OF 141 LIFESCI COPYRIGHT 2003 CSA on STN  
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L61 ANSWER 137 OF 141 LIFESCI COPYRIGHT 2003 CSA on STN  
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L61 ANSWER 138 OF 141 MEDLINE on STN DUPLICATE 84  
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 Journal code: 7505876. ISSN: 0027-8424.  
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L61 ANSWER 139 OF 141 HCAPLUS COPYRIGHT 2003 ACS on STN  
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 CODEN: BBACAQ; ISSN: 0006-3002  
 AU Kawasaki, Kazunori; Sato, Satoshi B.; Ohnishi, Shunichi  
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L61 ANSWER 140 OF 141 MEDLINE on STN  
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 Journal code: 2985121R. ISSN: 0021-9258.  
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L61 ANSWER 141 OF 141 MEDLINE on STN DUPLICATE 85  
 TI Fibroblasts from patients with I-cell disease and pseudo-Hurler  
 polydystrophy are deficient in uridine 5'-diphosphate-N-acetylglucosamine:  
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 Journal code: 7802877. ISSN: 0021-9738.  
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 AN 81192346 MEDLINE

=> s 112 and glucosidase#  
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 10022 GLUCOSIDASE#

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L62          21 L1 AND GLUCOSIDASE#

FILE 'SCISEARCH'
          7752 GLUCOSIDASE#
L63          19 L2 AND GLUCOSIDASE#

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          3858 GLUCOSIDASE#
L64          9 L3 AND GLUCOSIDASE#

FILE 'BIOTECHDS'
          3042 GLUCOSIDASE#
L65          1 L4 AND GLUCOSIDASE#

FILE 'BIOSIS'
          10653 GLUCOSIDASE#
L66          22 L5 AND GLUCOSIDASE#

FILE 'EMBASE'
          8954 GLUCOSIDASE#
L67          16 L6 AND GLUCOSIDASE#

FILE 'HCAPLUS'
          15609 GLUCOSIDASE#
L68          25 L7 AND GLUCOSIDASE#

FILE 'NTIS'
          91 GLUCOSIDASE#
L69          0 L8 AND GLUCOSIDASE#

FILE 'ESBIOBASE'
          5065 GLUCOSIDASE#
L70          10 L9 AND GLUCOSIDASE#

FILE 'BIOTECHNO'
          4163 GLUCOSIDASE#
L71          12 L10 AND GLUCOSIDASE#

FILE 'WPIDS'
          1371 GLUCOSIDASE#
L72          0 L11 AND GLUCOSIDASE#

TOTAL FOR ALL FILES
L73          135 L12 AND GLUCOSIDASE#

=> s l73 not 2002-2003/py
FILE 'MEDLINE'
          898624 2002-2003/PY
L74          17 L62 NOT 2002-2003/PY

FILE 'SCISEARCH'
          1628347 2002-2003/PY
L75          16 L63 NOT 2002-2003/PY

FILE 'LIFESCI'
          137782 2002-2003/PY
L76          6 L64 NOT 2002-2003/PY

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          36013 2002-2003/PY
L77          1 L65 NOT 2002-2003/PY

FILE 'BIOSIS'
          812724 2002-2003/PY

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L78 21 L66 NOT 2002-2003/PY

FILE 'EMBASE'

739028 2002-2003/PY

L79 14 L67 NOT 2002-2003/PY

FILE 'HCAPLUS'

1765463 2002-2003/PY

L80 18 L68 NOT 2002-2003/PY

FILE 'NTIS'

17588 2002-2003/PY

L81 0 L69 NOT 2002-2003/PY

FILE 'ESBIOBASE'

467486 2002-2003/PY

L82 9 L70 NOT 2002-2003/PY

FILE 'BIOTECHNO'

203275 2002-2003/PY

L83 10 L71 NOT 2002-2003/PY

FILE 'WPIDS'

1736742 2002-2003/PY

L84 0 L72 NOT 2002-2003/PY

TOTAL FOR ALL FILES

L85 112 L73 NOT 2002-2003/PY

=> dup rem l85

PROCESSING COMPLETED FOR L85

L86 41 DUP REM L85 (71 DUPLICATES REMOVED)

=> d tot

L86 ANSWER 1 OF 41 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on  
STN

AN 2001238473 ESBIOBASE

TI Glycosidase active site mutations in human .alpha.-L-iduronidase

AU Brooks D.A.; Fabrega S.; Hein L.K.; Parkinson E.J.; Durand P.; Yogalingam  
G.; Matte U.; Giugliani R.; Dasvarma A.; Eslahpazire J.; Henrissat B.;  
Mornon J.-P.; Hopwood J.J.; Lehn P.

CS D.A. Brooks, Lysosomal Diseases Research Unit, Department of Chemical  
Pathology, Women's and Children's Hospital, King William Road, North  
Adelaide, SA 5006, Australia.

SO Glycobiology, (2001), 11/9 (741-750), 42 reference(s)  
CODEN: GLYCE3 ISSN: 0959-6658

DT Journal; Article

CY United Kingdom

LA English

SL English

L86 ANSWER 2 OF 41 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on  
STN

AN 2001042843 ESBIOBASE

TI Chondroitin sulfate is involved in lysosomal transport of lysozyme in  
U937 cells

AU Lemansky P.; Hasilik A.

CS A. Hasilik, Philipps-Universitat Marburg, Inst. fur Physiol. Chemie,  
Karl-von-Frisch-Strasse 1, 35033 Marburg, Germany.  
E-mail: hasilika@mailier.uni-marburg.de

SO Journal of Cell Science, (2001), 114/2 (345-352), 37 reference(s)  
CODEN: JNCSAI ISSN: 0021-9533

DT Journal; Article

CY United Kingdom  
LA English  
SL English

L86 ANSWER 3 OF 41 EMBASE COPYRIGHT 2003 ELSEVIER INC. ALL RIGHTS RESERVED.  
on STN DUPLICATE 1

TI The **lysosomal targeting** and intracellular metabolism  
of trypanosome lytic factor by Trypanosoma brucei brucei.  
SO Molecular and Biochemical Parasitology, (2001) 115/2 (227-237).  
Refs: 49  
ISSN: 0166-6851 CODEN: MBIPDP  
AU Shimamura M.; Hager K.M.; Hajduk S.L.  
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L86 ANSWER 4 OF 41 MEDLINE on STN DUPLICATE 2  
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but not basolateral sialoglycoproteins and blocks lysosomal enzyme  
processing in a post-trans-Golgi network compartment.  
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Journal code: 2985121R. ISSN: 0021-9258.  
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AN 2000396451 MEDLINE

L86 ANSWER 5 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
TI **Lysosomal** cysteine protease, cathepsin H, is **targeted**  
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SO BIOLOGICAL & PHARMACEUTICAL BULLETIN, (JUL 2000) Vol. 23, No. 7, pp.  
805-809.  
Publisher: PHARMACEUTICAL SOC JAPAN, 2-12-15-201 SHIBUYA, SHIBUYA-KU,  
TOKYO 150, JAPAN.  
ISSN: 0918-6158.  
AU Tanaka Y; Tanaka R; Himeno M (Reprint)  
AN 2000:528021 SCISEARCH

L86 ANSWER 6 OF 41 HCAPLUS COPYRIGHT 2003 ACS on STN  
TI Fate and sorting of acid .beta.-**glucosidase** in transgenic  
mammalian cells  
SO Molecular Genetics and Metabolism (2000), 70(4), 281-294  
CODEN: MGMEFF; ISSN: 1096-7192  
AU Leonova, Tatyana; Grabowski, Gregory A.  
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L86 ANSWER 7 OF 41 MEDLINE on STN DUPLICATE 3  
TI Systemic correction of the muscle disorder glycogen storage disease type  
II after hepatic targeting of a modified adenovirus vector encoding human  
acid-alpha-**glucosidase**.  
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AMERICA, (1999 Aug 3) 96 (16) 8861-6.  
Journal code: 7505876. ISSN: 0027-8424.  
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T  
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L86 ANSWER 8 OF 41 MEDLINE on STN DUPLICATE 4  
TI Promotion of tyrosinase folding in COS 7 cells by calnexin.  
SO JOURNAL OF BIOCHEMISTRY, (1999 Jan) 125 (1) 82-9.  
Journal code: 0376600. ISSN: 0021-924X.  
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L86 ANSWER 9 OF 41 HCAPLUS COPYRIGHT 2003 ACS on STN  
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causes an illness with critical features of both infantile and adult human glycogen storage disease type II

SO Journal of Biological Chemistry (1998), 273(30), 19086-19092  
CODEN: JBCHA3; ISSN: 0021-9258

AU Raben, Nina; Nagaraju, Kanneboyina; Lee, Eunice; Kessler, Paul; Byrne, Barry; Lee, Laura; LaMarca, Mary; King, Christina; Ward, Jerrold; Sauer, Brian; Plotz, Paul

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DN 129:215243

L86 ANSWER 10 OF 41 MEDLINE on STN DUPLICATE 5

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Pompe disease fibroblasts in vitro, and **lysosomally**  
**targeted** expression in neonatal rat cardiac and skeletal muscle.

SO GENE THERAPY, (1998 Apr) 5 (4) 473-80.  
Journal code: 9421525. ISSN: 0969-7128.

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L86 ANSWER 11 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Treatment of central nervous system inflammation with inhibitors of  
basement membrane degradation

SO IMMUNOLOGY AND CELL BIOLOGY, (FEB 1998) Vol. 76, No. 1, pp. 104-113.  
Publisher: BLACKWELL SCIENCE, 54 UNIVERSITY ST, P O BOX 378, CARLTON  
VICTORIA 3053, AUSTRALIA.  
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B; Willenborg D O  
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L86 ANSWER 12 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Carbohydrate structures of recombinant human alpha-L-iduronidase secreted  
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Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE  
PIKE, BETHESDA, MD 20814.  
ISSN: 0021-9258.

AU Zhao K W; Faull K F; Kakkis E D; Neufeld E F (Reprint)  
AN 97:688118 SCISEARCH

L86 ANSWER 13 OF 41 MEDLINE on STN DUPLICATE 6

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SO HUMAN GENE THERAPY, (1997 Sep 1) 8 (13) 1555-63.  
Journal code: 9008950. ISSN: 1043-0342.

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Plotz P H  
AN 97463304 MEDLINE

L86 ANSWER 14 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Functional characterization of the N-glycosylation sites of human acid  
sphingomyelinase by site-directed mutagenesis

SO EUROPEAN JOURNAL OF BIOCHEMISTRY, (15 JAN 1997) Vol. 243, No. 1-2, pp.  
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Publisher: SPRINGER VERLAG, 175 FIFTH AVE, NEW YORK, NY 10010.  
ISSN: 0014-2956.

AU Ferlinz K; Hurwitz R; Moczall H; Lansmann S; Schuchman E H; Sandhoff K  
(Reprint)  
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L86 ANSWER 15 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

TI Biosynthesis, processing, and targeting of sphingolipid activator protein

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Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC, 9650 ROCKVILLE PIKE, BETHESDA, MD 20814.  
ISSN: 0021-9258.  
AU Vielhaber G; Hurwitz R; Sandhoff K (Reprint)  
AN 97:2990 SCISEARCH

L86 ANSWER 16 OF 41 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on STN  
AN 1996175426 ESBIODASE  
TI Purification and characterization of human lymphoblast N-acetylglucosamine-1-phosphodiester .alpha.-N-acetylglucosaminidase  
AU Page T.; Zhao K.-W.; Tao L.; Miller A.L.  
CS A.L. Miller, Department Neurosciences 0624, University of California, San Diego, La Jolla, CA 92093-0624, United States.  
SO Glycobiology, (1996), 6/6 (619-626)  
CODEN: GLYCE3 ISSN: 0959-6658  
DT Journal; Article  
CY United Kingdom  
LA English  
SL English

L86 ANSWER 17 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
TI GLYCOSYLATION AND PHOSPHORYLATION OF LYSOSOMAL GLYCOSYLASPARAGINASE  
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ISSN: 0003-9861.  
AU PARK H; VETTESEDADEY M; ARONSON N N (Reprint)  
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L86 ANSWER 18 OF 41 Elsevier BIOBASE COPYRIGHT 2003 Elsevier Science B.V. on STN  
AN 1994101223 ESBIODASE  
TI Lysine is a common determinant for mannose phosphorylation of lysosomal proteins  
AU Cuozzo J.W.; Sahagian G.G.  
CS G.G. Sahagian, Dept. of Physiology, Tufts University, 136 Harrison Ave., Boston, MA 02111, United States.  
SO Journal of Biological Chemistry, (1994), 269/20 (14490-14496)  
CODEN: JBCHA3 ISSN: 0021-9258  
DT Journal; Article  
CY United States  
LA English  
SL English

L86 ANSWER 19 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 7  
TI LYSOSOMAL STORAGE DISEASES - CELLULAR PATHOLOGY, CLINICAL AND GENETIC-HETEROGENEITY, THERAPY  
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AN 95:105243 SCISEARCH

L86 ANSWER 20 OF 41 MEDLINE on STN  
TI Clathrin heavy chain functions in sorting and secretion of lysosomal enzymes in Dictyostelium discoideum.  
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Journal code: 0375356. ISSN: 0021-9525.  
AU Ruscetti T; Cardelli J A; Niswonger M L; O'Halloran T J  
AN 94308265 MEDLINE



L86 ANSWER 21 OF 41 MEDLINE on STN DUPLICATE 8  
 TI Structural and functional changes of lysosomal acid alpha-  
**glucosidase** during intracellular transport and maturation.  
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 Journal code: 2985121R. ISSN: 0021-9258.  
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 AN 93131986 MEDLINE

L86 ANSWER 22 OF 41 MEDLINE on STN DUPLICATE 9  
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 Gaucher fibroblasts with fluorogenic probes.  
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 Journal code: 8305874. ISSN: 0263-6484.  
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 Prince J  
 AN 94006955 MEDLINE

L86 ANSWER 23 OF 41 MEDLINE on STN DUPLICATE 10  
 TI Glycosidase inhibitors: inhibitors of N-linked oligosaccharide processing.  
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 Journal code: 8804484. ISSN: 0892-6638.  
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 AN 92077332 MEDLINE

L86 ANSWER 24 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI MANNOSE 6-PHOSPHATE RECEPTOR INDEPENDENT **TARGETING** OF  
**LYSOSOMAL**-ENZYMES  
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 1167-1173.  
 ISSN: 0309-1651.  
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 AN 92:71499 SCISEARCH

L86 ANSWER 25 OF 41 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Lysosomal enzyme secretory mutants of Dictyostelium discoideum  
 SO Journal of Cell Science (1990), 96(3), 491-500  
 CODEN: JNCSAI; ISSN: 0021-9533  
 AU Ebert, David L.; Jordan, Kevin B.; Dimond, Randall L.  
 AN 1990:587939 HCAPLUS  
 DN 113:187939

L86 ANSWER 26 OF 41 MEDLINE on STN DUPLICATE 11  
 TI The effects of altered N-linked oligosaccharide structures on maturation  
 and **targeting** of **lysosomal** enzymes in Dictyostelium  
 discoideum.  
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 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Freeze H H; Koza-Taylor P; Saunders A; Cardelli J A  
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L86 ANSWER 27 OF 41 MEDLINE on STN DUPLICATE 12  
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 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Bush J M; Cardelli J A  
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L86 ANSWER 28 OF 41 MEDLINE on STN DUPLICATE 13  
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 chloroquine differentially affect proteolytic processing and sorting.  
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 Journal code: 2985121R. ISSN: 0021-9258.

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AN 89123476 MEDLINE

L86 ANSWER 29 OF 41 MEDLINE on STN DUPLICATE 14  
TI A Dictyostelium discoideum mutant that missorts and oversecreted lysosomal enzyme precursors is defective in endocytosis.  
SO JOURNAL OF CELL BIOLOGY, (1989 Oct) 109 (4 Pt 1) 1445-56.  
Journal code: 0375356. ISSN: 0021-9525.  
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AN 90009021 MEDLINE

L86 ANSWER 30 OF 41 LIFESCI COPYRIGHT 2003 CSA on STN  
TI A Dictyostelium discoideum mutant that missorts and oversecreted lysosomal enzyme precursors is defective in endocytosis.  
SO J. CELL BIOL., (1989) vol. 109, no. 4, pt. 1, pp. 1445-1456.  
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AN 89:59809 LIFESCI

L86 ANSWER 31 OF 41 MEDLINE on STN DUPLICATE 15  
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L86 ANSWER 41 OF 41 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 19

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L86 ANSWER 7 OF 41 MEDLINE on STN DUPLICATE 3  
AB This report demonstrates that a single intravenous administration of a  
gene therapy vector can potentially result in the correction of all

affected muscles in a mouse model of a human genetic muscle disease. These results were achieved by capitalizing both on the positive attributes of modified adenovirus-based vectoring systems and receptor-mediated **lysosomal targeting** of enzymes. The muscle disease treated, glycogen storage disease type II, is a lysosomal storage disorder that manifests as a progressive myopathy, secondary to massive glycogen accumulations in the skeletal and/or cardiac muscles of affected individuals. We demonstrated that a single intravenous administration of a modified Ad vector encoding human acid **alpha-glucosidase** (GAA) resulted in efficient hepatic transduction and secretion of high levels of the precursor GAA proenzyme into the plasma of treated animals. Subsequently, systemic distribution and uptake of the proenzyme into the skeletal and cardiac muscles of the GAA-knockout mouse was confirmed. As a result, systemic decreases (and correction) of the glycogen accumulations in a variety of muscle tissues was demonstrated. This model can potentially be expanded to include the treatment of other lysosomal enzyme disorders. Lessons learned from systemic genetic therapy of muscle disorders also should have implications for other muscle diseases, such as the muscular dystrophies.

L86 ANSWER 9 OF 41 HCAPLUS COPYRIGHT 2003 ACS on STN

AB The authors have used gene targeting to create a mouse model of glycogen storage disease type II, a disease in which distinct clin. phenotypes present at different ages. As in the severe human infantile disease (Pompe Syndrome), mice homozygous for disruption of the acid **alpha-glucosidase** gene (6neo/6neo) lack enzyme activity and begin to accumulate glycogen in cardiac and skeletal muscle lysosomes by 3 wk of age, with a progressive increase thereafter. By 3.5 wk of age, these mice have markedly reduced mobility and strength. They grow normally, however, reach adulthood, remain fertile, and, as in the human adult disease, older mice accumulate glycogen in the diaphragm. By 8-9 mo of age animals develop obvious muscle wasting and a weak, waddling gait. This model, therefore, recapitulates crit. features of both the infantile and the adult forms of the disease at a pace suitable for the evaluation of enzyme or gene replacement. In contrast, in a second model, mutant mice with deletion of exon 6 (.DELTA.6/.DELTA.6), like the recently published acid **alpha-glucosidase** knockout with disruption of exon 13 (Bijvoet, A. G., van de Kamp, E. H., Kroos, M., Ding, J. H., Yang, B. Z., Visser, P., Bakker, C. E., Verbeet, M. P., Oostra, B. A., Reuser, A. J. J., and van der Ploeg, A. T. (1998) Hum. Mol. Genet. 7, 53-62), have unimpaired strength and mobility (up to 6.5 mo of age) despite indistinguishable biochem. and pathol. changes. The genetic background of the mouse strains appears to contribute to the differences among the three models.

L86 ANSWER 10 OF 41 MEDLINE on STN DUPLICATE 5

AB The enzyme acid **alpha-glucosidase** catalyzes the breakdown of lysosomal glycogen. Absence of this enzyme results in infantile Pompe disease, characterized by hypertrophic cardiomyopathy, skeletal muscle weakness and fatal heart failure by 2 years of age. We have examined the possibility of gene replacement therapy for this disease, by constructing an El-deleted recombinant adenovirus encoding human acid **alpha-glucosidase** (Ad-GAA). The dose-response in fibroblasts from patients with Pompe disease transduced with this vector is linear over the range tested (one to 2000 plaque forming units (p.f.u.) of Ad-GAA per cell), and acid **alpha-glucosidase** activity comparable to that of normal fibroblasts is achieved at 100 p.f.u. per cell. Targeting of the recombinant protein to the lysosomal compartment was confirmed by immunocytochemistry. In vivo expression was examined by injecting Ad-GAA into newborn rats; intracardiac administration produced 10 times the normal level of acid **alpha-glucosidase** activity in whole heart lysates, while a hind-limb i.m. injection increased activity in that muscle to six times the normal level. Western blotting of these tissues detected species at 76 kDa consistent with the size of processed lysosomal

enzyme, and levels of expression as high as 1.0 mg recombinant protein per gram of tissue wet weight were produced. These data demonstrate high-level, lysosomal expression of recombinant acid alpha-**glucosidase** in treated target tissues and support the feasibility of gene replacement strategies for Pompe disease.

L86 ANSWER 13 OF 41 MEDLINE on STN DUPLICATE 6  
AB Myoblasts have properties that make them suitable vehicles for gene replacement therapy, and **lysosomal** storage diseases are attractive **targets** for such therapy. Type II Glycogen Storage Disease, a deficiency of acid alpha-**glucosidase** (GAA), results in the abnormal accumulation of glycogen in skeletal and cardiac muscle lysosomes. The varied manifestations of the enzyme deficiency in affected patient are ultimately lethal. We used a retroviral vector carrying the cDNA encoding for GAA to replace the enzyme in deficient myoblasts and fibroblasts and analyzed the properties of the transduced cells. The transferred gene was efficiently expressed, and the de novo-synthesized enzyme reached lysosomes where it digested glycogen. In enzyme-deficient myoblasts after transduction, enzyme activity rose to more than 30-fold higher than in normal myoblasts and increased about five-fold more when the cells were allowed to differentiate into myotubes. The transduced cells secreted GAA that was endocytosed via the mannose-6-phosphate receptor into lysosomes of deficient cells and digested glycogen. Moreover, the transduced myoblasts were able to fuse with and provide enzyme for GAA-deficient fusion partners. Thus, the gene-corrected cells, which appear otherwise normal, may ultimately provide phenotypic correction to neighboring GAA-deficient cells by fusion and to distant cells by secretion and uptake mechanisms.

L86 ANSWER 19 OF 41 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 7  
AB Lysosomal storage diseases are genetically determined metabolic diseases characterized by dysmorphology and dysfunction of the lysosomal system. The lysosomal pathology can have different causes; these are (i) the deficiency of a lysosomal enzyme or subunit thereof, (ii) the deficiency of a protein assisting one or more lysosomal enzymes in their catalytic function by activation and/or stabilization, or by substrate presentation, (iii) the deficiency or dysfunction of a lysosomal membrane carrier protein essential for the export of degradation products from the lysosomal interior to the cytoplasm or, (iiii) defective **targeting** of **lysosomal** proteins to the **lysosomes**. This excerpt of an oral presentation given at Eurolab 93 starts with a general introduction on lysosomes and lysosomal storage diseases and devotes attention to current issues in this field.

L86 ANSWER 21 OF 41 MEDLINE on STN DUPLICATE 8  
AB The synthesis and posttranslational modification of lysosomal acid alpha-**glucosidase** were studied in a cell-free translation system and in mammalian cells transfected with acid alpha-**glucosidase** cDNA constructs. The newly synthesized precursor, sequestered in the endoplasmic reticulum, was demonstrated to be membrane-bound by lack of signal peptide cleavage, and to be catalytically inactive. Sugar chain modification was shown to occur in the Golgi complex and to be dependent on the rate of transport. From the trans-Golgi network different routes were found to be followed by acid alpha-**glucosidase**. A fraction of precursor molecules, proteolytically released from the membrane anchor, appeared to enter the secretory pathway and was recovered from the cell culture medium in a catalytically active form. A second fraction was transported to the lysosomes and was trimmed in a stepwise process at both the amino- and carboxyl-terminal ends. The intramolecular cleavage sites were determined. Involvement of thiol proteinases was demonstrated. Specificity for the natural substrate glycogen was gained during the maturation process. The phosphomannosyl receptor is assumed to be instrumental in the **lysosomal targeting** of acid alpha-**glucosidase**, but a phosphomannosyl receptor-independent transport

of membrane-bound precursor molecules to the lysosomes, either directly or via the plasma membrane, cannot be excluded.

L86 ANSWER 37 OF 41 MEDLINE on STN

AB The principles and methods used for enzymatic modification of the carbohydrate portion of glucocerebrosidase are similar to those performed by Ashwell and Morell, Stahl, and others. It is difficult to explain the lack of uptake of native enzyme through binding of the high-mannose type glycopeptide to Man/GlcNAc receptors since approximately 20% of the total oligosaccharides on the native enzyme are high mannose type. Possibly a requirement for multiple sites of attachment to the receptor is not met by a single high-mannose type oligosaccharide per molecule. Alternatively, the presence of complex type oligosaccharides on this enzyme, demonstrated by structural studies, may mask the mannose site and thus account for the poor uptake of native enzyme. The ability to successfully deglycosylate any protein or enzyme in order to specifically target a selected cell type requires that there be (1) an available source of pure enzyme; (2) specific exoglycosidases of high specific activity available either commercially or relatively easily purified; (3) chemical or biochemical means available for the testing of the product, preferably at each step; and (4) a means of separating the glycosidases used from the desired enzyme product. The characteristic and unique accumulation of glucocerebroside only in cells of the monocyte- histiocyte series, makes Gaucher's disease an excellent prototype for the study of enzyme replacement therapy. The principles demonstrated for the enzymatic deglycosylation of glucocerebrosidase may be applied to the cell-specific delivery of other glycoproteins as well. Other lysosomal diseases in which storage occurs in multiple cell types may be ameliorated by administration of macrophage-directed enzymes if, by so doing, storage material can be digested during the normal phagocytic turnover of senescent cells. Consideration of the kinetics of degradation and the structural features affecting the stability of enzymes in vivo are prerequisites to improving the bioengineering of **targeted lysosomal** enzymes. Animal and culture models have been developed for the study of glucocerebrosidase delivery to specific cell types and substrate degradation. Other studies have progressed toward a definition not only of the receptors at the plasma membrane involved in the internalization of exogenous enzyme, but also of internal receptors or properties of the lysosome responsible for intracellular protein trafficking. A complete understanding of the forces acting to direct endogenous or exogenously supplied enzyme to a given subcellular organelle will require a synthesis of experimental results from all areas of glycoprotein research.

L86 ANSWER 39 OF 41 MEDLINE on STN DUPLICATE 17

AB Highly purified cultures of rat astrocytes and oligodendrocytes were examined for their ability to bind and internalize lysosomal enzymes. Astrocytes displayed a saturable uptake of beta-**glucosidase** and beta-galactosidase. The uptake was specifically inhibited by mannose-6-phosphate but not by several other sugars or sugar phosphates, indicating that the process was mediated by mannose-6-phosphate receptors. When cells were allowed to take up 125I-beta-**glucosidase** for 1 hr at 37 degrees C and subcellular organelles were isolated, the enzyme was shown to comigrate with a lysosomal organelle marker enzyme, suggesting that the enzyme was **targeted to lysosomes**. Astrocyte receptors were probed directly by binding of 125I labeled beta-**glucosidase** to astrocyte membranes at 4 degrees C. Binding was saturable and competitively inhibited by mannose-6-phosphate. In contrast to the astrocytes, cultured oligodendrocytes showed no specific binding or uptake of the lysosomal enzymes. Immunocytochemical staining of mixed glial cultures supported the biochemical data; only the astrocytes stained positive with anti-mannose-6-phosphate receptor antibodies.

L86 ANSWER 41 OF 41 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

DUPLICATE 19

AB The **targeting** of acid hydrolases to **lysosomes** involves phosphorylation of mannose residues on these enzymes. To determine whether alterations in the structure of the oligosaccharide acceptor affect formation of the mannose 6-phosphate recognition marker, 2 mouse lymphoma cell lines altered in the assembly of asparagine-linked oligosaccharides were studied. Cells were labeled with [2-3H]mannose and the phosphorylated oligosaccharides were isolated and characterized. PhaR2.7 cells, which are deficient in **glucosidase** II activity, formed less oligosaccharide-bound mannose 6-phosphate than parent cells. The major phosphorylated oligosaccharide formed by PhaR2.7 contained a single phosphodiester located on the branch linked .alpha.1,6 to the .beta.-linked mannose; the majority of these molecules were glucosylated. Relatively few oligosaccharides containing 2 phosphate esters were isolated and those formed were not glucosylated. This suggests that glucose residues present on high mannose oligosaccharides prevent phosphorylation of mannose residues on the branch linked .alpha.1,3 to the .beta.-linked mannose. In contrast, Thy-1- cells synthesized a normal level of oligosaccharide-bound mannose 6-phosphate despite forming truncated, high mannose-type units. These oligosaccharides contained only 4 mannose residues and single phosphate, present as either a phosphodiester or phosphomonoester. .beta.-Galactosidase isolated from Thy-1- cells bound to human fibroblast membranes and was endocytosed by intact fibroblasts to a similar extent as parent enzyme. These findings demonstrate that altered high mannose-type oligosaccharides on lysosomal enzymes are phosphorylated. However, the extent of phosphorylation and the distribution of the esters is dependent upon the structure of the acceptor oligosaccharide. In addition, the presence of monophosphorylated oligosaccharides on acid hydrolases is sufficient for their recognition and translocation by the mannose 6-phosphate receptor.

=> d ab 19,24,40,48,49,54,63,86,88,89,103,106,110 161

L61 ANSWER 19 OF 141 MEDLINE on STN

AB The critical step in **lysosomal targeting** of soluble **lysosomal** enzymes is the recognition by an UDP-N-acetylglucosamine:lysosomal enzyme-N-acetylglucosamine-1-phosphotransferase. The structure of the determinant common to all lysosomal enzymes for proper recognition by the phosphotransferase is not completely understood. Our current knowledge is largely based on the introduction of **targeted** amino acid substitutions into **lysosomal** enzymes and analysis of their effects on phosphotransferase recognition. We have investigated the effect of eight anti-arylsulfatase A monoclonal antibodies on the interaction of arylsulfatase A with the lysosomal enzyme phosphotransferase in vitro. We also show that a lysine-rich surface area of arylsulfatases A and B is essential for proper recognition by the phosphotransferase. Monoclonal antibodies bind to at least six different epitopes at different locations on the surface of arylsulfatase A. All antibodies bind outside the lysine-rich recognition area, but nevertheless Fab fragments of these antibodies prevent interaction of arylsulfatase A with the phosphotransferase. Our data support a model in which binding of arylsulfatase A to the phosphotransferase is not restricted to a limited surface area but involves the simultaneous recognition of large parts of arylsulfatase A.

L61 ANSWER 24 OF 141 MEDLINE on STN

DUPLICATE 16

AB In mammalian cells, the **mannose** 6-phosphate receptors (MPRs) and the lysosomal glycoproteins, lysosomal-associated membrane protein (LAMP) I, lysosomal integral membrane protein (LIMP) II, are directly transported from the trans-Golgi network to endosomes and lysosomes. While MPR traffic relies on the AP-1 adaptor complex, we report that proper targeting of LAMP I and LIMP II to lysosomes requires the AP-3

adaptor-like complex. Overexpression of these proteins, which contain either a tyrosine- or a di-leucine-based-sorting motif, promotes AP-3 recruitment on membranes. Inhibition of AP-3 function using antisense oligonucleotides leads to a selective misrouting of both LAMP I and LIMP II to the cell surface without affecting MPR trafficking. These results provide evidence that AP-3 functions in the intracellular **targeting** of transmembrane glycoproteins to **lysosomes**.

L61 ANSWER 40 OF 141 MEDLINE on STN DUPLICATE 28  
AB alpha-L-Iduronidase is a lysosomal hydrolase that is deficient in Hurler syndrome and clinically milder variants. **Recombinant** human alpha-L-iduronidase, isolated from secretions of an overexpressing Chinese hamster ovary cell line, is potentially useful for replacement therapy of these disorders. Because of the importance of carbohydrate residues for endocytosis and **lysosomal targeting**, we examined the oligosaccharides of **recombinant** alpha-L-iduronidase at each of its six N-glycosylation sites. Biosynthetic radiolabeling showed that three or four of the six oligosaccharides of the secreted enzyme were cleaved by endo-beta-N-acetylglucosaminidase H, with phosphate present on the sensitive oligosaccharides and L-fucose on the resistant ones. For structural analysis, tryptic and chymotryptic glycopeptides were isolated by **lectin** binding and reverse phase high pressure liquid chromatography; their molecular mass was determined by matrix-assisted laser desorption-time of flight mass spectrometry before and after treatment with endo- or exoglycosidases or with alkaline phosphatase. Identification of the peptides was assisted by amino- or carboxyl-terminal **sequence** analysis. The major oligosaccharide structures found at each site were as follows: Asn-110, complex; Asn-190, complex; Asn-336, bisphosphorylated (P2Man7GlcNAc2); Asn-372, high **mannose** (mainly Man9GlcNAc2, some of which was monoglucosylated); Asn-415, mixed high **mannose** and complex; Asn-451, bisphosphorylated (P2Man7GlcNAc2). The Asn-451 glycopeptide was unexpectedly resistant to digestion by N-glycanase unless first dephosphorylated, but it was sensitive to endo-beta-N-acetylglucosaminidase H and to glycopeptidase A. The heterogeneity of carbohydrate structures must represent the accessibility of the glycosylation sites as well as the processing capability of the overexpressing Chinese hamster ovary cells.

L61 ANSWER 48 OF 141 MEDLINE on STN  
AB Disorders of glycoprotein synthesis have been described only recently, and few have been studied extensively at both the clinical and biochemical level. The identification and characterization of these rare diseases are important, not only for the patients and their families, but because they offer enormous insight into biological processes. For example, the **targeting** of acid hydrolases to **lysosomes** by **mannose-6-phosphate** was discovered as a direct result of the elucidation of the defect in I-cell disease. The notion of carbohydrates as targeting agents continues to have ramifications today, with the success of macrophage-targeted enzyme replacement therapy for Gaucher disease. Likewise, confirmation of the in vivo role of fucose-containing glycans and selectins in neutrophil function came from studies using specimens from patients with leucocyte adhesion deficiency type II due to reduced availability of GDP-fucose. Identification of the in vivo ligands of selectins also has implications for anti-inflammatory therapies. Macular corneal dystrophy and spondyloepiphyseal dysplasia tarda offer an opportunity to investigate the number of different sulfotransferases in cells, their substrates, and their tissue expression. The Ehlers-Danlos progeroid variant offers insight into the function and regulation of the proteoglycan decorin, and suggests that several of the enzymes involved in proteoglycan synthesis may function as a multienzyme complex. The common occurrence of hypergonadotropic hypogonadism in patients with galactosemia or carbohydrate-deficient glycoprotein protein syndrome, due to defective N-linked glycosylation, suggests that ovarian function is particularly dependent on proper glycan-synthesis. A host of other concepts await



discovery as a fuller contingent of human disorders of glycan synthesis achieves recognition.

L61 ANSWER 49 OF 141 HCAPLUS COPYRIGHT 2003 ACS on STN  
AB Unavailable

L61 ANSWER 54 OF 141 MEDLINE on STN DUPLICATE 35  
AB We have previously generated primary embryonic fibroblasts lacking either the cation-independent **mannose** 6-phosphate/insulin-like growth factor II receptor (MPR) or the cation-dependent MPR, two trans-membrane proteins that bind the **mannose** 6-phosphate (Man-6-P) recognition marker on soluble lysosomal enzymes (Ludwig, T., Munier-Lehmann, H., Bauer, U., Hollinshead, M., Ovitt, C., Lobel, P., and Hoflack, B. (1994) EMBO J. 13, 3430-3437). These two cell types partially missort phosphorylated lysosomal enzymes. Using two-dimensional gel electrophoresis, we show here that they secrete, in a large part, different phosphorylated ligands. In order to better understand the sorting function of the MPRs, we have re-expressed each MPR in MPR-negative fibroblasts. We show that the MPRs have similar capacities for transporting the bulk of the newly synthesized **lysosomal** enzymes and that they **target** individual ligands with various efficiencies. However, high levels of one MPR do not fully compensate for the absence of the other, demonstrating that the two MPRs have complementary targeting functions, perhaps by recognizing different features on lysosomal enzymes. The analysis of the phosphorylated oligosaccharides shows that the ligands missorted in the absence of the cation-dependent MPR are slightly but significantly depleted in oligosaccharides with two Man-6-P residues, when compared with those missorted in the absence of the cation-independent MPR. While these results could explain some differences between the structure and the sorting function of the two MPRs, they strongly suggest that the reason why cells express two different but related MPRs is to maintain an efficient Man-6-P-dependent targeting process that could be potentially regulated by MPR expression.

L61 ANSWER 63 OF 141 MEDLINE on STN  
AB Glycosylasparaginase (EC 3.5.1.26) is a lysosomal amidase which hydrolyzes the bond between asparagine and the sugar moiety in N-linked glycoproteins. Deficiency of the enzyme results in aspartylglycosaminuria (AGU), the most common disorder of glycoprotein degradation. Mature enzyme is formed by two proteolytic cleavage steps subsequent to removal of its signal peptide: (1) an activation cleavage in the ER of the initial single-chain 49-kDa polypeptide into a 27-kDa alpha- and 19-kDa beta-subunit; (2) a cleavage in lysosomes which removes 10 amino acids from the C-terminus of the alpha-subunit without affecting enzyme activity. Each subunit of glycosylasparaginase contains one N-linked oligosaccharide (N38, alpha-subunit; N308, beta-subunit). Both oligosaccharides were phosphorylated and releasable by Endo-H digestion, indicating they were of the high-**mannose** type. These glycosylation sequenons were mutagenized to determine the role of the oligosaccharide at each site in proper folding and transport of glycosylasparaginase. An N38D mutant underwent the **lysosomal** processing step, indicating that **targeting to lysosomes** can be via the phosphorylated beta-subunit oligosaccharide alone. Deletion of the beta-subunit oligosaccharide oat N308 by an aspartic acid substitution resulted in very little protein or enzyme activity in the transfected cells, reemphasizing that glycosylation of the beta-subunit site is important for efficient folding and/or targeting. A different mutation to eliminate the same N-glycosylation sequenon (T310A) yielded more protein and enzyme activity, and a double mutant N38D/T310A yielded the same results as the single beta-subunit substitution. Yield of enzyme for all mutants was increased in cells treated with brefeldin A. The N308 glycosylation site of the beta-subunit appears to be more important in maintaining normal transport and stability of human glycosylasparaginase.

- L61 ANSWER 86 OF 141 MEDLINE on STN DUPLICATE 54  
AB Phosphorylation of **mannose** residues on N-linked oligosaccharide side chains of **lysosomal** enzymes **targets** them to **lysosomes**. We used site-directed mutagenesis to observe the effect of eliminating selective glycosylation sites from human beta-glucuronidase on enzyme sorting. Expression studies allowed us to determine which of four potential sites were glycosylated, preferentially phosphorylated, and required for catalytic activity. All four sites of the human enzyme were glycosylated, whereas in the mouse and rat enzymes, only three of four sites are used. Sites 2 and 3 were preferentially phosphorylated. Elimination of sites 2 and 3 in combination markedly decreased sorting to lysosomes and increased enzyme secretion. Each of the four glycosylation sites could be eliminated individually without drastic reduction in catalytic activity. Activity was progressively lost as combinations of two, three, and four sites were eliminated. Wild-type enzyme produced in the presence of tunicamycin was also inactive, indicating that glycosylation is required for realization of enzyme activity. However, active enzyme could be deglycosylated with only minimal loss of activity. Mutant enzyme completely lacking glycosylation did not form tetramers. Partial restoration of tetramerization was achieved by the co-expression of normal rat enzyme, provided that the normal rat enzyme supplied at least two subunits to the tetramer.
- L61 ANSWER 88 OF 141 MEDLINE on STN DUPLICATE 56  
AB In mammalian cells two **mannose** 6-phosphate receptors (MPRs) are involved in lysosomal enzyme transport. To understand the precise function of the cation-dependent **mannose** 6-phosphate receptor (CD-MPR), one allele of the corresponding **gene** has been disrupted in mouse embryonic stem cells and homozygous mice lacking this receptor have been generated. The homozygous mice appear normal, suggesting that other targeting mechanisms can partially compensate for the loss of the CD-MPR in vivo. However, homozygous receptor-deficient cells and animals clearly exhibit defects in **targeting** of multiple **lysosomal** enzymes when compared with wild-types. Increased levels of phosphorylated lysosomal enzymes were present in body fluids of homozygous animals. In thymocytes from homozygous mice or in primary cultures of fibroblasts from homozygous embryos, there is a marked increase in the amount of phosphorylated lysosomal enzymes that are secreted into the extracellular medium. The cultured fibroblasts have decreased intracellular levels of multiple lysosomal enzymes and accumulate macromolecules within their endosomal/lysosomal system. Taken together, these results clearly indicate that the CD-MPR is required for efficient intracellular **targeting** of multiple **lysosomal** enzymes.
- L61 ANSWER 89 OF 141 MEDLINE on STN DUPLICATE 57  
AB Lysosomal enzymes containing **mannose** 6-phosphate recognition markers are sorted to lysosomes by **mannose** 6-phosphate receptors (MPRs). The physiological importance of this targeting mechanism is illustrated by I-cell disease, a fatal lysosomal storage disorder caused by the absence of **mannose** 6-phosphate residues in lysosomal enzymes. Most mammalian cells express two MPRs. Although the binding specificities, subcellular distribution and expression pattern of the two receptors can be differentiated, their coexpression is not understood. The larger of the two receptors with an M(r) of approximately 300,000 (MPR300), which also binds IGFII, appears to have a dominant role in **lysosomal** enzyme **targeting**, while the function of the smaller receptor with an M(r) of 46,000 (MPR46) is less clear. To investigate the in vivo function of the MPR46, we generated MPR46-deficient mice using **gene** targeting in embryonic stem cells. Reduced intracellular retention of newly synthesized lysosomal proteins in cells from MPR46 -/- mice demonstrated an essential sorting function of MPR46. The phenotype of MPR46 -/- mice was normal, indicating

mechanisms that compensate the MPR46 deficiency in vivo.

L61 ANSWER 103 OF 141 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

AB Lysosomal enzymes are subjected to a number of modifications including carbohydrate restructuring and proteolytic maturation. Some of these reactions support **lysosomal targeting**, others are necessary for activation or keeping the enzyme inactive before being segregated, while still others may be adventitious. The non-segregated fraction of the enzyme is secreted and can be isolated from the medium. It is considered that the secreted lysosomal enzymes fulfill certain physiological and pathophysiological roles. By comparing the secreted and the intracellular enzymes it is possible to distinguish between the reactions that occur before and after the segregation. In this review the reactions that may influence the segregation are referred to as the early processing and those characteristic for the enzymes isolated from lysosomal compartments as the late processing. The early processing is characterized mainly by modifications of carbohydrate side chains. In the late processing, proteolytic fragmentation represents the most conspicuous changes. The review focuses on the compartmentation of the reactions and the proteolytic fragmentation of lysosomal enzyme precursors. While a plethora of proteolytic reactions are involved, our knowledge of the proteinases responsible for the particular maturation reactions remains very limited. The review points also to work with cells from patients affected with lysosomal storage disorders, which contributed to our understanding of the lysosomal apparatus.

L61 ANSWER 106 OF 141 MEDLINE on STN

AB Lysosomal enzymes contain a common protein determinant that is recognized by UDP-GlcNAc:lysosomal enzyme N-acetylglucosamine-1-phosphotransferase, the initial enzyme in the biosynthesis of **mannose-6-P** residues. Previously, we generated a lysosomal enzyme recognition domain by substituting two regions (lysine 203 and amino acids 265-292) of the lysosomal hydrolase cathepsin D into a related secretory protein glycopepsinogen. When expressed in *Xenopus* oocytes, the oligosaccharides of the chimeric protein were efficiently phosphorylated (Baranski, T. J., Faust, P. L., and Kornfeld, S. (1990) Cell 63, 281-291). In the current study, incremental substitutions of cathepsin D residues into glycopepsinogen and alanine-scanning mutagenesis were utilized to define the recognition domain more precisely. A computer-generated model of the cathepsin D/pepsinogen chimeric molecule served as a guide for mutagenesis and for the interpretation of results. These studies indicate that the recognition domain is a surface patch that contains multiple interacting sites. There is a strict positional requirement for the lysine residue at position 203.

L61 ANSWER 110 OF 141 MEDLINE on STN DUPLICATE 66

AB Recent studies have established that in mammalian cells insulin-like growth factor-II can couple the large **mannose-6-phosphate** receptor to a GTP-binding protein and that the insulin-like growth factor-II-induced activation of the GTP-binding protein is inhibited by **mannose-6-phosphate** and lysosomal enzymes. In mouse, the **gene** for the large **mannose-6-phosphate** receptor is maternally imprinted.

=> d ab 130, 133,136 161

L61 ANSWER 130 OF 141 MEDLINE on STN

L61 ANSWER 133 OF 141 MEDLINE on STN DUPLICATE 81

AB The **targeting** of **lysosomal** enzymes from their site of synthesis in the rough endoplasmic reticulum (RER) to their final destination in lysosomes is directed by a series of protein and carbohydrate recognition signals on the enzymes. Lysosomal enzymes, along

with secretory and plasma membrane proteins, contain amino-terminal signal **sequences** that direct the vectorial discharge of the nascent proteins into the lumen of the RER. The three classes of proteins also share a common peptide signal for asparagine glycosylation. The next signal is unique to lysosomal enzymes and permits their high-affinity binding to a specific phosphotransferase that catalyzes the formation of the **mannose** 6-phosphate recognition marker. This carbohydrate determinant allows binding to specific receptors that translocate the lysosomal enzymes from the Golgi complex to an acidified prelysosomal compartment. There the lysosomal enzymes are discharged for final packaging into lysosomes. Two distinct **mannose** 6-phosphate receptors have been identified, and cDNAs encoding their entire **sequences** have been cloned. An analysis of the deduced amino acid **sequences** of the receptors shows that each is composed of four structural domains: a signal **sequence**, an extracytoplasmic amino-terminal domain, a hydrophobic membrane-spanning region, and a cytoplasmic domain. The entire extracytoplasmic region of the small receptor is homologous to the 15 repeating domains that constitute the extracytoplasmic portion of the large receptor.

L61 ANSWER 136 OF 141 LIFESCI COPYRIGHT 2003 CSA on STN

AB This review covers: Principles of the **recombinant** DNA approach; genetic manipulation; insertion of proteins into and across the membrane of the ER; targeting of proteins to the cell surface; the **mannose** 6-phosphate signal of **lysosomal** hydrolases; **targeting** of proteins into the nucleus; targeting of proteins into mitochondria; and targeting of proteins into chloroplasts.

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	18.01	280.91
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
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CA SUBSCRIBER PRICE	0.00	-0.65

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\* \* \* \* \* STN Columbus \* \* \* \* \*

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FULL ESTIMATED COST	0.21	0.21

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS, ESBIODBASE, BIOTECHNO, WPIDS' ENTERED AT 13:48:45 ON 23 SEP 2003  
ALL COPYRIGHTS AND RESTRICTIONS APPLY. SEE HELP USAGETERMS FOR DETAILS.

11 FILES IN THE FILE LIST

=> s (glcnac or acetylglucosamine) (5a)phosphotransferase#

FILE 'MEDLINE'

4202 GLCNAC  
7315 ACETYLGLUCOSAMINE  
18919 PHOSPHOTRANSFERASE#

L1 110 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'SCISEARCH'

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3848 GLCNAC
3857 ACETYLGLUCOSAMINE
4607 PHOSPHOTRANSFERASE#
L2      96 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'LIFESCI'
1501 GLCNAC
1710 ACETYLGLUCOSAMINE
2827 PHOSPHOTRANSFERASE#
L3      38 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'BIOTECHDS'
306 GLCNAC
473 ACETYLGLUCOSAMINE
1924 PHOSPHOTRANSFERASE#
L4      3 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'BIOSIS'
4592 GLCNAC
6311 ACETYLGLUCOSAMINE
6120 PHOSPHOTRANSFERASE#
L5      134 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'EMBASE'
3588 GLCNAC
5552 ACETYLGLUCOSAMINE
10083 PHOSPHOTRANSFERASE#
L6      95 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'HCAPLUS'
5341 GLCNAC
10819 ACETYLGLUCOSAMINE
7512 PHOSPHOTRANSFERASE#
L7      156 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'NTIS'
5 GLCNAC
30 ACETYLGLUCOSAMINE
130 PHOSPHOTRANSFERASE#
L8      0 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'ESBIOBASE'
1916 GLCNAC
1558 ACETYLGLUCOSAMINE
3237 PHOSPHOTRANSFERASE#
L9      33 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'BIOTECHNO'
2328 GLCNAC
2814 ACETYLGLUCOSAMINE
6691 PHOSPHOTRANSFERASE#
L10     73 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

FILE 'WPIDS'
264 GLCNAC
505 ACETYLGLUCOSAMINE
272 PHOSPHOTRANSFERASE#
L11     8 (GLCNAC OR ACETYLGLUCOSAMINE) (5A) PHOSPHOTRANSFERASE#

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8220784 HUMAN  
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 1052388 HUMAN  
 L14 3 L2 (5A) HUMAN  
 FILE 'LIFESCI'  
 325578 HUMAN  
 L15 0 L3 (5A) HUMAN  
 FILE 'BIOTECHDS'  
 57793 HUMAN  
 L16 1 L4 (5A) HUMAN  
 FILE 'BIOSIS'  
 5523089 HUMAN  
 L17 11 L5 (5A) HUMAN  
 FILE 'EMBASE'  
 4805388 HUMAN  
 L18 5 L6 (5A) HUMAN  
 FILE 'HCAPLUS'  
 1175737 HUMAN  
 L19 13 L7 (5A) HUMAN  
 FILE 'NTIS'  
 81706 HUMAN  
 L20 0 L8 (5A) HUMAN  
 FILE 'ESBIOBASE'.  
 364239 HUMAN  
 L21 0 L9 (5A) HUMAN  
 FILE 'BIOTECHNO'  
 714420 HUMAN  
 L22 2 L10 (5A) HUMAN  
 FILE 'WPIDS'  
 129154 HUMAN  
 L23 1 L11 (5A) HUMAN  
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 L24 40 L12 (5A) HUMAN

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L25 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Method for production of highly phosphorylated human acid  
 .beta.-glucocerebrosidase (GBA), and use of GBA in treating bone or lung  
 tissue of patient with Gaucher's disease  
 SO U.S. Pat. Appl. Publ., 54 pp.  
 CODEN: USXXCO  
 IN Canfield, William  
 AN 2003:550993 HCAPLUS  
 DN 139:112730  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003133924	A1	20030717	US 2001-24197	20011221

L25 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Soluble **human acetylglucosamine-1-phosphotransferase** containing an artificial proteolytic cleavage site to generate .alpha. and .beta. subunits  
 SO U.S. Pat. Appl. Publ., 55 pp.  
 CODEN: USXXCO  
 IN Canfield, William; Kudo, Mariko  
 AN 2003:492554 HCAPLUS  
 DN 139:65404

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003119088	A1	20030626	US 2001-23888	20011221
	WO 2003057826	A2	20030717	WO 2002-US37624	20021220
	W:				
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	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

L25 ANSWER 3 OF 22 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
 TI Novel N-acetylglucosamine-1-phosphotransferase and N-acetylglucosamine-1-phosphodiester-alpha-N-acetylglucosaminidase, useful for producing phosphorylated lysosomal hydrolase for treating lysosomal storage diseases;  
 vector-mediated gene transfer and expression in host cell, monoclonal antibody and hybridoma  
 AU Canfield W M  
 AN 2001-09921 BIOTECHDS  
 PI WO 2001019955 22 Mar 2001

L25 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Cloning and functional expression of the human GlcNAc-1P transferase, the enzyme for the committed step of the dolichol cycle, by heterologous complementation in *Saccharomyces cerevisiae*  
 SO Glycobiology (1998), 8(1), 77-85  
 CODEN: GLYCE3; ISSN: 0959-6658  
 AU Eckert, Volker; Blank, Michaela; Mazhari-Tabrizi, Ramin; Mumberg, Dominik; Funk, Martin; Schwarz, Ralph T.  
 AN 1998:119172 HCAPLUS  
 DN 128:253554

L25 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Lysosomal enzyme phosphorylation. II. Protein recognition determinants in either lobe of procathepsin D are sufficient for phosphorylation of both the amino and carboxyl lobe oligosaccharides  
 SO Journal of Biological Chemistry (1992), 267(32), 23349-56  
 CODEN: JBCHA3; ISSN: 0021-9258  
 AU Cantor, Alan B.; Baranski, Thomas J.; Kornfeld, Stuart  
 AN 1992:587144 HCAPLUS  
 DN 117:187144

L25 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Lysosomal enzyme phosphorylation. I. Protein recognition determinants in both lobes of procathepsin D mediate its interaction with UDP-GlcNAc:lysosomal enzyme N-acetylglucosamine-1-phosphotransferase  
 SO Journal of Biological Chemistry (1992), 267(32), 23342-8  
 CODEN: JBCHA3; ISSN: 0021-9258

AU Baranski, Thomas J.; Cantor, Alan B.; Kornfeld, Stuart  
AN 1992:587145 HCAPLUS  
DN 117:187145

L25 ANSWER 7 OF 22 MEDLINE on STN DUPLICATE 2  
TI Purification and characterization of **human lymphoblast N-acetylglucosamine-1-phosphotransferase**.  
SO GLYCOBIOLOGY, (1992 Apr) 2 (2) 119-25.  
Journal code: 9104124. ISSN: 0959-6658.  
AU Zhao K W; Yeh R; Miller A L  
AN 92298029 MEDLINE

L25 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
TI Mapping and molecular modeling of a recognition domain for lysosomal enzyme targeting  
SO Journal of Biological Chemistry (1991), 266(34), 23365-72  
CODEN: JBCHA3; ISSN: 0021-9258  
AU Baranski, Thomas J.; Koelsch, Gerald; Hartsuck, Jean A.; Kornfeld, Stuart  
AN 1991:627034 HCAPLUS  
DN 115:227034

L25 ANSWER 9 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 3  
TI ELEVATED CARBOHYDRATE PHOSPHOTRANSFERASE ACTIVITY IN HUMAN HEPATOMA AND PHOSPHORYLATION OF CATHEPSIN D.  
SO BR J CANCER, (1991) 63 (6), 905-908.  
CODEN: BJCAAI. ISSN: 0007-0920.  
AU OHHIRA M; GASA S; MAKITA A; SEKIYA C; NAMIKI M  
AN 1991:410623 BIOSIS

L25 ANSWER 10 OF 22 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
TI ELEVATED CARBOHYDRATE PHOSPHOTRANSFERASE ACTIVITY IN HUMAN HEPATOMA AND PHOSPHORYLATION OF CATHEPSIN-D  
SO BRITISH JOURNAL OF CANCER, (1991) Vol. 63, No. 6, pp. 905-908.  
AU OHHIRA M; GASA S (Reprint); MAKITA A; SEKIYA C; NAMIKI M  
AN 91:384702 SCISEARCH

L25 ANSWER 11 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
TI BIOCHEMICAL HETEROGENEITY AND PRENATAL DIAGNOSIS OF MUCOLIPIDOSES II AND III.  
SO PROCEEDINGS OF THE 8TH INTERNATIONAL CONGRESS OF HUMAN GENETICS, WASHINGTON, D.C., USA, OCTOBER 6-11, 1991. AM J HUM GENET. (1991) 49 (4 SUPPL ), 94.  
CODEN: AJHGAG. ISSN: 0002-9297.  
AU BEN-YOSEPH Y; MITCHELL D A; YAGER R M  
AN 1992:112469 BIOSIS

L25 ANSWER 12 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
TI **HUMAN LYMPHOBLAST N ACETYLGLUCOSAMINE-1-PHOSPHOTRANSFERASE** PARTIAL PURIFICATION AND CHARACTERIZATION.  
SO JOINT MEETING OF THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY, AND THE AMERICAN ASSOCIATION OF IMMUNOLOGISTS, NEW ORLEANS, LOUISIANA, USA, JUNE 4-7, 1990. FASEB (FED AM SOC EXP BIOL) J. (1990) 4 (7), A1980.  
CODEN: FAJOEC. ISSN: 0892-6638.  
AU ZHAO K; YEH R; MILLER A L  
AN 1990:346154 BIOSIS

L25 ANSWER 13 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
TI PRENATAL DIAGNOSIS OF I-CELL DISEASE IN THE FIRST AND SECOND TRIMESTERS.  
SO AM J MED SCI, (1989) 297 (6), 361-364.  
CODEN: AJMSA9. ISSN: 0002-9629.  
AU PARVATHY M R; MITCHELL D A; BEN-YOSEPH Y  
AN 1989:445784 BIOSIS



L25 ANSWER 14 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 TI CORRECTION OF CLASSICAL MUCOLIPIDOSIS III BY GENE TRANSFER.  
 SO 40TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF HUMAN GENETICS, BALTIMORE,  
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 AN 1990:40514 BIOSIS

L25 ANSWER 15 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 TI A VARIANT OF MUCOLIPIDOSIS II. CLINICAL BIOCHEMICAL AND PATHOLOGICAL  
 INVESTIGATIONS.  
 SO Eur. J. Pediatr., (1988) 147 (3), 321-327.  
 CODEN: EJPEDT. ISSN: 0340-6199.  
 AU POENARU L; CATELNAU L; TOME F; BOUE J; MAROTEAUX P  
 AN 1988:318271 BIOSIS

L25 ANSWER 16 OF 22 MEDLINE on STN DUPLICATE 4  
 TI Glucose-1-phosphotransferase and N-acetylglucosamine-1-phosphotransferase  
 have distinct acceptor specificities.  
 SO JOURNAL OF BIOLOGICAL CHEMISTRY, (1987 Mar 25) 262 (9) 4377-81.  
 Journal code: 2985121R. ISSN: 0021-9258.  
 AU Hiller A M; Koro L A; Marchase R B  
 AN 87166059 MEDLINE

L25 ANSWER 17 OF 22 MEDLINE on STN DUPLICATE 5  
 TI Properties of N-**acetylglucosamine 1-phosphotransferase**  
 from **human** lymphoblasts.  
 SO BIOCHEMICAL JOURNAL, (1987 Nov 15) 248 (1) 151-9.  
 Journal code: 2984726R. ISSN: 0264-6021.  
 AU Little L; Alcouloumre M; Drotar A M; Herman S; Robertson R; Yeh R Y;  
 Miller A L  
 AN 88133837 MEDLINE

L25 ANSWER 18 OF 22 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
 TI PROPERTIES OF N-**ACETYLGLUCOSAMINE 1-PHOSPHOTRANSFERASE**  
 FROM **HUMAN**-LYMPHOBLASTS  
 SO BIOCHEMICAL JOURNAL, (1987) Vol. 248, No. 1, pp. 151-159.  
 AU LITTLE L (Reprint); ALCOULOU M; DROTAR A M; HERMAN S; ROBERTSON R; YEH  
 R Y; MILLER A L  
 AN 87:642689 SCISEARCH

L25 ANSWER 19 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 TI Heterogeneity of N-acetylglucosamine 1-phosphotransferase within  
 mucopolipidosis III  
 SO Journal of Biological Chemistry (1986), 261(2), 733-8  
 CODEN: JBCHA3; ISSN: 0021-9258  
 AU Little, Lauren E.; Mueller, O. Thomas; Honey, Neville K.; Shows, Thomas  
 B.; Miller, Arnold L.  
 AN 1986:107397 HCAPLUS  
 DN 104:107397

L25 ANSWER 20 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 TI A MODEL SYSTEM TO STUDY **HUMAN N ACETYLGLUCOSAMINE-1-  
 PHOSPHOTRANSFERASE**.  
 SO 69TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR  
 EXPERIMENTAL BIOLOGY, ANAHEIM, CALIF., USA, APR. 21-26, 1985. FED PROC.  
 (1985) 44 (5), 1408.  
 CODEN: FEPA7. ISSN: 0014-9446.  
 AU LITTLE L E; ALCOULOMBRE M; DROTAR A M; MILLER A L  
 AN 1985:150907 BIOSIS

L25 ANSWER 21 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN

TI UDP-N-acetylglucosamine:lysosomal enzyme precursor N-acetylglucosamine-1-phosphotransferase. Partial purification and characterization of the rat liver Golgi enzyme  
 SO Journal of Biological Chemistry (1982), 257(20), 12322-31  
 CODEN: JBCHA3; ISSN: 0021-9258  
 AU Waheed, Abdul; Hasilik, Andrej; Von Figura, Kurt  
 AN 1983:13458 HCAPLUS  
 DN 98:13458

L25 ANSWER 22 OF 22 MEDLINE on STN DUPLICATE 6  
 TI Phosphorylation of lysosomal enzymes in fibroblasts. Marked deficiency of N-acetylglucosamine-1-phosphotransferase in fibroblasts of patients with mucopolipidosis III.  
 SO HOPPE-SEYLER'S ZEITSCHRIFT FÜR PHYSIOLOGISCHE CHEMIE, (1982 Feb) 363 (2) 169-78.  
 Journal code: 2985060R. ISSN: 0018-4888.  
 AU Waheed A; Hasilik A; Cantz M; von Figura K  
 AN 82140517 MEDLINE

=> d ab 3,4

L25 ANSWER 3 OF 22 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT/ISI on STN  
 AB Isolated **human N-acetylglucosamine-1-phosphotransferase (GlcNAc-phosphotransferase)** and **N-acetylglucosamine-1-phosphodiester-alpha-N-acetylglucosaminidase (phosphodiester-alpha-GlcNAcase, EC-3.1.4.45)**, is new. Also claimed are: nucleic acids encoding GlcNAc-phosphotransferase and phosphodiester alpha-GlcNAcase; vector containing the nucleic acids; host cell containing the vector; preparation of GlcNAc-phosphotransferase or phosphodiester-alpha-GlcNAcase; nucleic acids encoding mouse GlcNAc-phosphotransferase which has an alpha-subunit, beta-subunit and gamma-subunit and mouse phosphodiester-alpha-GlcNAcase; vector and host cell transformed with this vector; preparation of mouse GlcNAc-phosphotransferase and phosphodiester-alpha-GlcNAcase; lysosomal hydrolase containing a mannose-6-phosphate; phosphorylated lysosomal hydrolase; producing a high mannose lysosomal hydrolase; high mannose lysosomal hydrolase; and monoclonal antibodies produced by PT18 hybridoma (ATCC PTA 2432) or UC1 hybridoma (ATCC 2431). The GlcNAc-phosphotransferase and phosphodiester-alpha-GlcNAcase are useful for producing a phosphorylated lysosomal hydrolase for treating lysosomal storage disease. (91pp)

L25 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2003 ACS on STN  
 AB The gene for the human dolichol cycle GlcNAc-1-P transferase (ALG7/GPT) was cloned by screening a human lung fibroblast cDNA library. The library was constructed in a *Saccharomyces cerevisiae* expression vector, and the pos. clone was identified by complementation of the conditional lethal *S.cerevisiae* strain YPH-A7-GAL. This strain was constructed by replacing the endogenous promoter of the GPT-gene by the stringently regulated GAL1-promoter. This construct allows to specifically suppress the endogenous enzyme activity. The insert of the pos. clone displayed an open reading frame of 1200 nucleotides, coding for a putative protein of 400 amino acids with a calcd. mol. wt. of 44.7 kDa. The deduced protein sequence shows a homol. of over 90% when compared with other mammalian GPT sequences, thus resembling the close phylogenetic relation between mammalian species. This homol. however decreases to 40-50% when compared to more distantly related organisms such as *S. cerevisiae*, *Schizosaccharomyces pombe*, or *Leishmania amazonensis*. Biochem. characterization of the recombinant protein showed that it is functionally expressed in the *S. cerevisiae* strain YPH-A7-GAL. GlcNAc- and GlcNAc2-PP-Dolichol biosynthesis could be shown with isolated *S.cerevisiae* membranes from cells harboring the recombinant plasmid and grown on glucose thus suppressing transcription of the endogenous gene. Synthesis

could be stimulated by dolichol phosphate and was inhibited by tunicamycin. These results show that the authors have cloned the human GlcNAc-1-P transferase by heterologous complementation in *S.cerevisiae*, a strategy that may be useful for the cloning and characterization of glycosyltransferases from a variety of organisms.

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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FULL ESTIMATED COST	76.16	76.37
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-0.65	-0.65

STN INTERNATIONAL LOGOFF AT 14:07:38 ON 23 SEP 2003